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# PC Computing

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With Microsoft Office, you don't have to make your thought process conform to your computer's process. Use the Office Binder to create a single document (a marketing report, perhaps) that uses files from several Microsoft Office programs. Combine a cover letter, financial projections, and professional-looking charts and graphs into one file. Save it and print it as one. Open it and have all the applications it uses launch at once. You spend less time going back and forth between programs. Less time working around obstacles. More time focusing on the work at hand.

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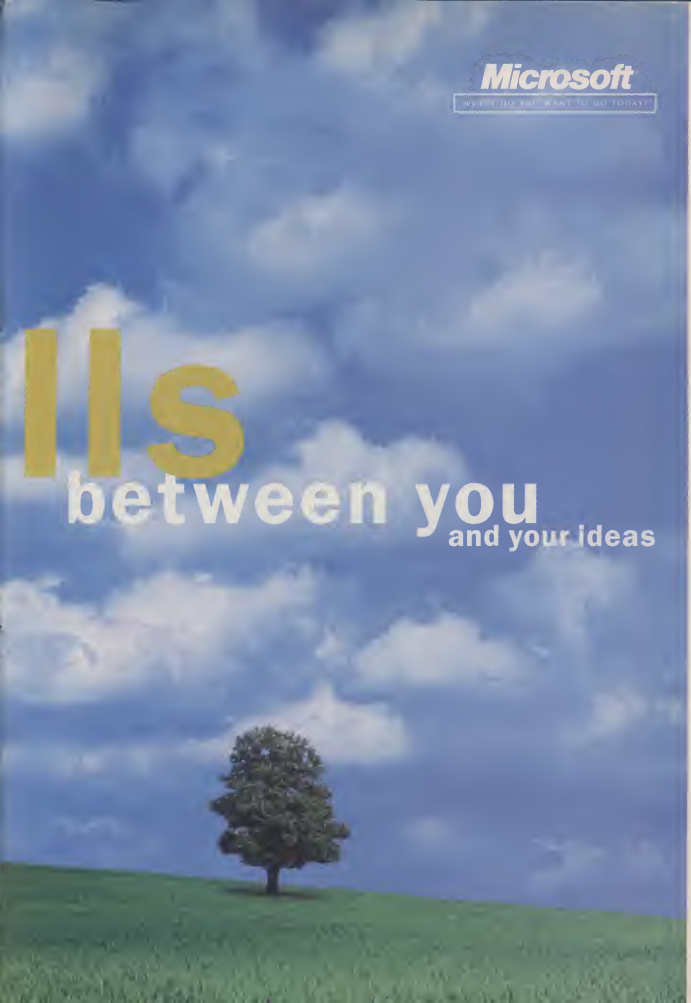
## No barriers between your ideas and other people.

You can use the new Internet Assistants for Microsoft Excel, Word, and PowerPoint to create home pages on the World Wide Web. (Just download the tools from our Web site.) When you save a document, choose HTML format, and it's ready to post onto the Web. Also use Microsoft Word to communicate more clearly through e-mail or the Internet. Create your message inside Word, using its formatting options like italic, bold, indented paragraphs, and bulleted lists to emphasize your point. Then send the message without ever closing out of Word. Inside your company and out, Microsoft Office makes it easier for people to access your ideas, work together to perfect them, and collaborate on how to implement them.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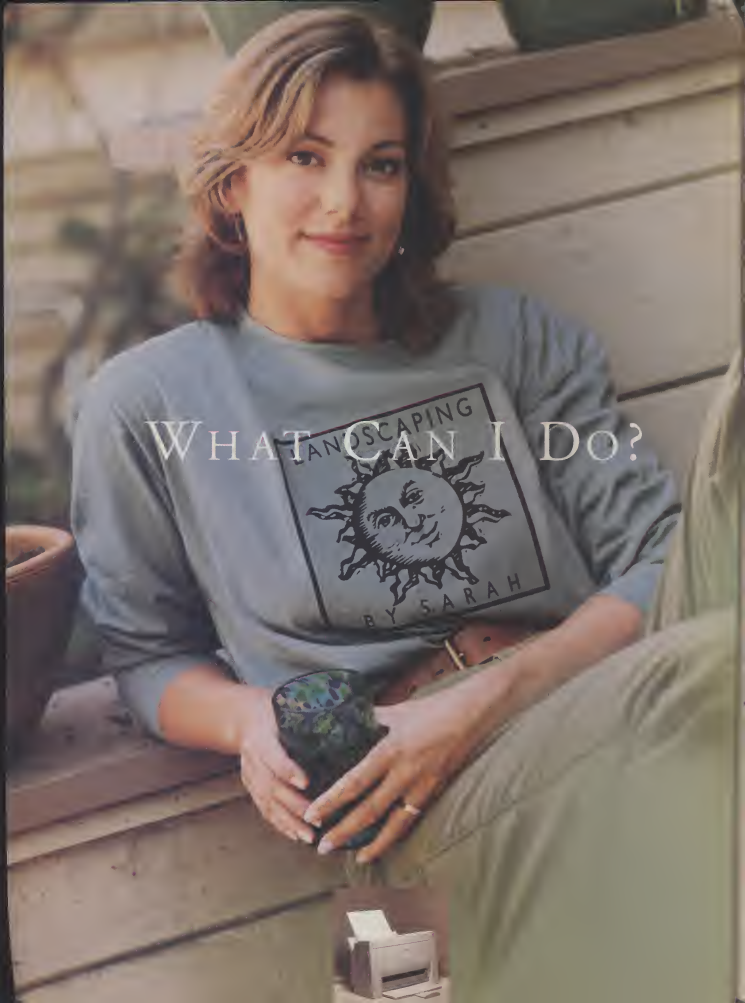


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| | Contura 430C | Contura 430CX | LTE 5000 Model 510 | LTE 5100 Model 810 |
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| **Processor** | 486DX4/100MHz | 486DX4/100MHz | Pentium 75MHz | Pentium 90MHz |
| **Std./Max. Memory** | 8MB/32MB | 8MB/32MB | 8MB/72MB | 8MB/72MB |
| **Hard Drive** | 720MB | 720MB | 510MB (removable) | 810MB (removable) |
| **Cache** | 16KB Internal | 16KB Internal | 256KB, 64-Bit | 256KB, 64-Bit |
| **Diskette Drive** | Internal 3.5" 1.44MB | Internal 3.5" 1.44MB | Modular 3.5" 1.44MB | Modular 3.5" 1.44MB |
| **Display** | 10.4" Color Dual Scan | 10.4" Color TFT | 10.4" Color Dual Scan | 10.4" (800x600) CTFT |
| **Video Graphics** | 32-Bit Local Bus | 32-Bit Local Bus | 32-Bit PCI Local Bus 1MB VRAM | 32-Bit PCI Local Bus 1MB VRAM |
| **PCMCIA Slots** | 2 Type II | 2 Type II | 2 Type II | 2 Type II |
| **16-Bit Audio** | No | No | Yes | Yes |
| **Internal CD-ROM Drive** | N/A | N/A | Optional QuadSpeed | Optional QuadSpeed |
| **Pointing Device** | Optical Trackball | Optical Trackball | EasyPoint™ II | EasyPoint II |
| **NiMH Battery** | 3-5 Hours | 3-5 Hours | 2-4 Hours | 2-4 Hours |
| **Ports** | Keyboard/Pointing Device, Enhanced Parallel, Serial, External SVGA | Keyboard/Pointing Device, Enhanced Parallel, Serial, External SVGA | External Keyboard/ Pointing Device, Headphone/Speakers, Microphone, Infrared Communication, External SVGA | External Keyboard/ Pointing Device, Headphone/Speakers, Microphone, Infrared Communication, External SVGA |
| **Software** | MS-Windows® 95 or MS-Windows 3.1 | MS-Windows 95 or MS-Windows 3.1 | MS-Windows 95 or MS-Windows 3.1; MS-Video for Windows, Compaq Sound System | MS-Windows 95 or MS-Windows 3.1; MS-Video for Windows, Compaq Sound System |
| **Dimensions/Weight** | 11.9"x9"x2.2"/6.25 lbs. | 11.9"x9"x2.2"/6.5 lbs. | 12.2"x9"x2"/7.1 lbs. | 12.2"x9"x2"/7.4 lbs. |
| **Worldwide Warranty**** | 3-Year Limited | 3-Year Limited | 3-Year Limited | 3-Year Limited |
| **Price†** | **$2,399** | **$2,999** | **$3,849** | **$5,399** |

| | | | | |
|---|---|---|---|---|
| **Optional Expansion Base** | Includes a battery charger and separate AC adapter. Interfaces include: serial, enhanced parallel, monitor, numeric keypad, keyboard, mouse, and optional Ethernet. Monitor stand included. | | Modular expansion base allows devices to be shared between the notebook and base. Supports two additional hard drives or CD-ROM drives and additional diskette drive. Includes Integrated Ethernet. | |
| **Price†** | Docking Base | **$175** | MultiBay Expansion Base | **$489** |
| | Docking Base (Ethernet) | **$295** | QuadSpeed CD-ROM Drive | **$389** |

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| | 575e | 5100e | 5133 | 5166 |
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| **Processor** | Pentium® 75MHz | Pentium 100MHz | Pentium 133MHz | Pentium 166MHz |
| **Std./Max. Memory** | 8MB/136MB | 8MB/136MB | 16MB/192MB | 16MB/192MB |
| **Hard Drive** | 630MB or 1GB | 630MB or 1GB | 1.2GB or 2GB | 1.2GB or 2GB |
| **Cache Internal** | 16KB | 16KB | 16KB | 16KB |
| **Cache External** | 256KB (optional) | 256KB (optional) | 256KB | 256KB |
| **Architecture** | PCI | PCI | TriFlex/PCI | TriFlex/PCI |
| **Video Memory/Max.** | 1MB/2MB | 1MB/2MB | 1MB/2MB | 1MB/2MB |
| **Compaq 150 Color Monitor** | Yes | Yes | Yes | Yes |
| **Diskette Drive** | 3.5" 1.44MB | 3.5" 1.44MB | 3.5" 1.44MB | 3.5" 1.44MB |
| **Expansion Slots** (Total) | 3 | 3 | 5 | 5 |
| **Drive Bays** (Total) | 3 | 3 | 5 | 5 |
| **Ports: Serial/Parallel** | 1/1 (ECP) | 1/1 (ECP) | 1/1 (ECP) | 1/1 (ECP) |
| **Security Features** | Yes | Yes | Yes | Yes |
| **Processor Upgradable** | Yes | Yes | Yes | Yes |
| **101-Key Keyboard, Mouse** | Yes | Yes | Yes | Yes |
| **Software Preinstalled** (Choice of) | MS-Windows® 95 or MS-Windows 3.1 | MS-Windows 95 or MS-Windows 3.1 | MS-Windows 95 or MS-Windows 3.1 | MS-Windows 95 or MS-Windows 3.1 |
| **Energy Star Compliant** | Yes | Yes | Yes | Yes |
| **Limited Warranty*** | 3-Year | 3-Year | 3-Year | 3-Year |
| **Former Price†** | | | | |
| **630MB Hard Drive** | **$1,779** | **$2,049** | – | – |
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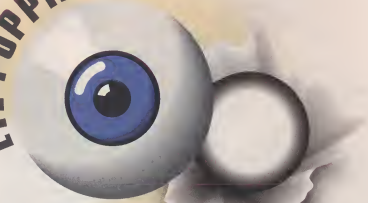

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Want a killer Web page? A winning newsletter? A standout report? Make everything you do rise to the top of the pile! We've got all the products you need to make it easy—scanners, printers, and tons of software. **101**

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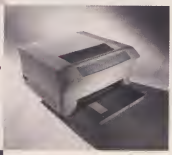

## Ultimate Video

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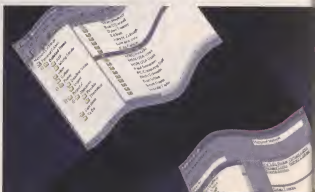

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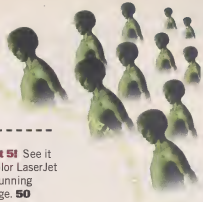

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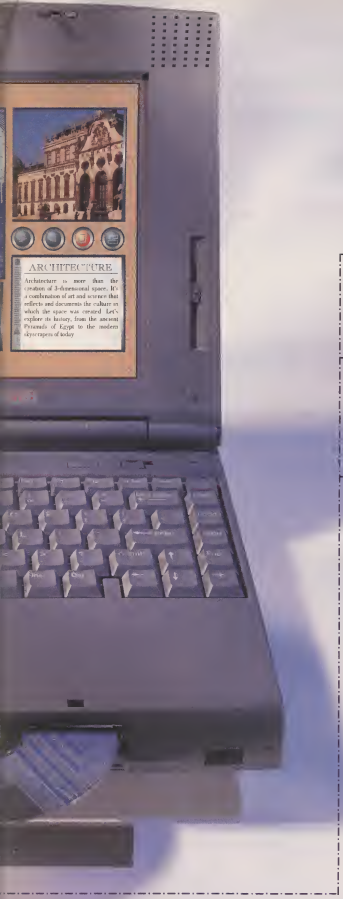


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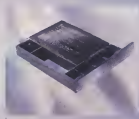

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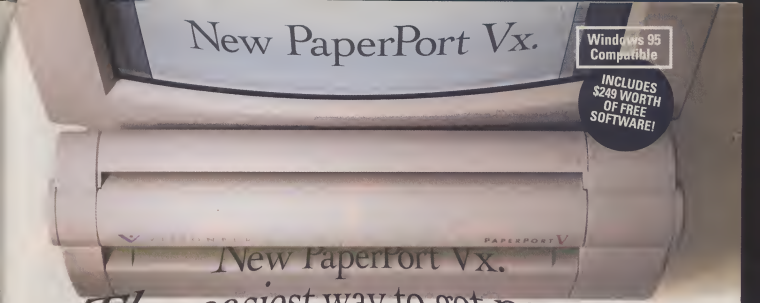


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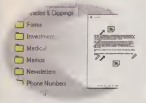


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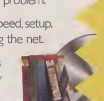

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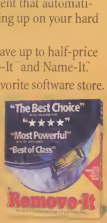


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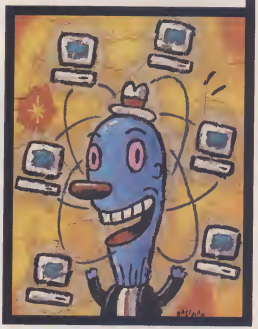

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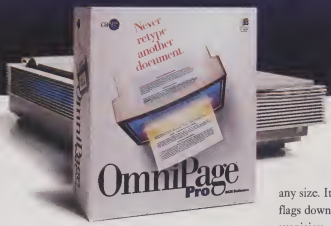


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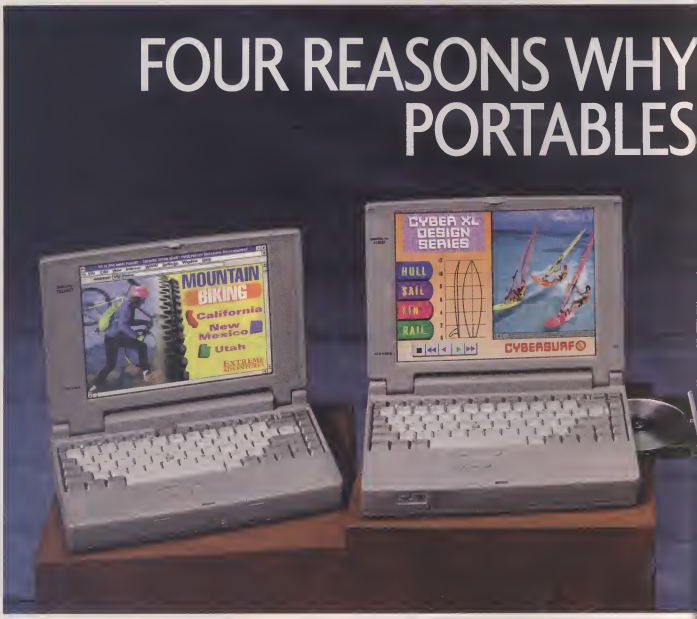


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Eight Total Expansion Slots
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5 Year/ 36 Month Warranty
First Year On-Site Service*

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**Looking for the ultimate in Pentium Pro technology?** The ALR EVOLUTION DUAL6 is one of the industry's first PCs to offer an immediate upgrade path to dual Pentium Pro technology. In other words, you can get the power of a high-performance RISC-based workstation for thousands of dollars less. Its the power you need to take advantage of 32-bit operating systems such as Windows® NT, SCO® UNIX, and Novell® NetWare™ SMP.

intel inside
PENTIUM®PRO PROCESSOR

With room for up to 512-MB of RAM and over 16-GB of storage, the EVOLUTION DUAL6 has the performance and expandability you're looking for in a small business server. **A suite of built-in Hardware Management Features** prevents downtime by monitoring critical information such as CPU temperature, fan speed, and system voltage. Or just add a high performance PCI video card, and you've got the ultimate CAD, scientific or animation workstation.

**Trying to fit Pentium Pro technology into a tight budget?** Then check out the ALR EVOLUTION 6. This value-packed PC offers a 150- or 200-MHz Pentium Pro chip and 16-MB of RAM for as little as $3495 MSRP. Yet even at this low price, it takes full advantage of the Pentium Pro chip's most advanced features, including Dynamic Execution.

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Mini Tower Model
16-MB Memory
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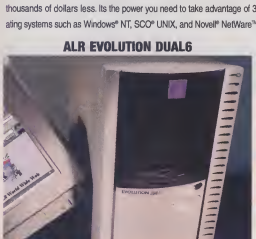
256-KB Integrated L2 Cache
PCI/ISA Bus Architecture
Six Total Storage Bays
Six Total Expansion Slots
200 Watt Power Supply
5 Year/ 36 Month Warranty
First Year On-Site Service*

**$3495** MSRP

## ALR EVOLUTION DUAL6



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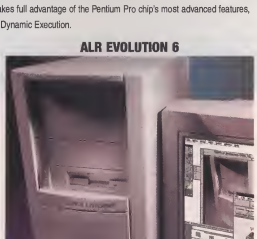
## ALR EVOLUTION 6



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MORE ON MICROSOFT AND THE WEB

## True Insight

Paul Somerson's commentary on Microsoft in his February column ("True Lies," page 61) hit the nail on the head. Microsoft earned its position by producing great software. But Somerson missed one important point about the World Wide Web. Although it's an awesome force in multimedia, the Web won't truly succeed until a faster way to transfer data is developed. That's what will make all the difference.

MARK SZABO
VIA THE INTERNET

## I-Way Robbery?

I can't believe that a publication as well respected as *PC Computing* allowed a writer to endorse copyright infringement—or just plain stealing—as a way to write Web pages. In "True Lies" (February), Paul Somerson said, "It's a snap to 'borrow' the HTML code from sites you like . . . and adapt it for your own needs." What is going on? People are trying to earn an honest living writing quality HTML documents, and your writers tell other people to steal the Web writers' work! You have lost face with many Web designers over this completely unacceptable article.

TIM SATTLER
VIA THE INTERNET

**PLEASE, GIVE US A BREAK.**
Note that we said "adapt," not "steal." There are only so many ways to position a photo or draw a line across a screen. Every programmer we know started by looking at how others do basic tasks and then adapting those ideas.

## Safety Net

Online banking is easy money? More like easy-take-my-money-and-run. In your online-banking article ("Easy Money," February, page 159), you failed to discuss safety measures, or the lack thereof. I know there are groups that will do whatever they can to cause complete chaos on the Internet. How safe is online banking, really? Will the Federal Deposit Insurance Corporation cover online-banking theft?

PAUL REA
VIA THE INTERNET

**ONLINE BANKING IS VERY SAFE.**
Most online-banking systems involve a direct phone call between you and your bank. During that hookup, your data is encrypted using the same methodology that the U.S. government employs to ensure the security of nuclear-launch codes.

## OS Wars

John C. Dvorak's February column ("Alien Nation," page 65) is great! However, he missed the symbolism of Windows 95's Start button—the beginning of getting the whole world on the same wavelength. The Windows NT rebel forces have a big red Stop button in their software to try and thwart the unification. Not to worry, I'm sure Emperor Bill Gates will come up with a new defense


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strategy and deny the NT rebel forces from advancing any further. Maybe we should infiltrate all of Microsoft's PCs and type something like *format c*. Hey, it could happen someday.

RAY NAGY
VIA THE INTERNET

## Finding the I-Way

I can't thank you enough for your January article ("The Right Way to the I-Way," page 179). I'm in the U.S. Navy and have been stationed in Japan for the past three years. While I've been over here, the Internet has changed and grown at an astounding rate. Internet providers are extremely expensive here. I've been using the Microsoft Network, but I desperately want to experiment with various local and national Internet providers. I'm returning to the United States soon, and your article answered many pressing questions I had on what Internet-connection choices to make when I return. Thanks again!

BRIAN F. UHLIR
VIA THE MICROSOFT NETWORK

## Free Library Launch

My public library in Long Island, New York, offers free Internet access. I took a chance and signed up. With the library's service you dial in with Datastorm Technologies' ProComm or Telemate, and have access to the Web, FTP, Gopher, and Archie sites—plus, newsgroups, e-mail, and Internet Relay Chat. The service's interface is text, not graphics, but it doesn't cost anything. Check out your local library. Maybe it offers a similar deal.

CHRISTOPHER DESANTO
VIA THE INTERNET

## Compare and Connect

In your "Online Superguide," (February page 115), how could you not compare connection reliability? America Online might have great content, but if I can never sign on, what's the advantage? My America Online access number is often busy, and when I do get through, America Online sometimes has "scheduled" downtime. Every person I talk to has had similar experiences. Is this common with other services? Which one is the most reliable?

STEVE WATTS
VIA THE INTERNET

**MOST COMMERCIAL SERVICES** have occasional access problems. Because of America Online's rapid growth, it has more. Until America Online adds more log-on points, you'll experience fewer delays using a service that has a larger and more established network of access points, such as CompuServe.

## Online Chatter

I read your "Online Superguide" (February) with great interest. I use America Online and Netscape's Navigator. They're both good services, depending on your needs. I use America Online to find files, and I use Navigator if I just want to browse through some Web sites. If I want to search for a piece of information on the Web, I use Alta Vista (altavista.digital.com). This is one of the best search engines around. It indexes by word, and you can restrict your search to title, address, or body of information you are looking for.

EVAN MOSES
VIA THE INTERNET

## Equal Internet Providers

In your February "Online Superguide," I don't know where you got the idea of comparing the major online services to Netscape's Navigator paired with a local Internet provider. I thought this approach was out to lunch. And to add insult to injury, the option of using Navigator with a local Internet provider received an editor's award. Tell me, if I use Navigator with America Online, would this option be given a double award? Despite what you think, the Microsoft Network and the other services are Internet providers, and FTP access is available with them. After you get back from lunch, do your homework.

CHIP LAROUCHE
VIA THE MICROSOFT NETWORK

## Misplaced Printer Priorities?

I liked your article on personal printers ("Printers Get Personal," February). But I am puzzled by your Decision Maker for bargain printers (page 148). When the most important factors are listed, in order,

**"Why did that project go so far over budget?"**

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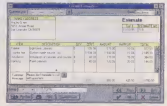

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as price, output quality, and black and white, you recommend Hewlett-Packard's LaserJet 5L. Yet if the most important priority is output quality, price, then black and white, you recommend Texas Instruments' microLaser Win/4. This suggests that the microLaser printer has better output quality and the LaserJet has a better price. But the microLaser is less expensive than the LaserJet. Is there a flaw in my logic?

HOWARD SCHAFFER
VIA THE INTERNET

**THESE TWO PRINTERS** are very close in output quality, but the microLaser has a slight edge. If price is your primary concern, the LaserJet offers more value—and some extras, like expandable RAM—for its price.

## Printer Mileage Varies

In your February printer feature (page 140), you reviewed Hewlett-Packard's DeskJet 855C, Canon's BJC-4100, and Epson's Stylus Color IIs ink-jet printers. That's like picking up *Car and Driver* magazine and reading about a comparison between a Lexus ES 300, a Honda Accord, and a Ford Escort. These cars are for different markets at different prices, as are the printers in your feature. According to your ratings the DeskJet took first place, the BJC-4100 came in second, and the Stylus Color was third. For their price differences, I would certainly hope so.

CHRIS HARLOW
VIA THE INTERNET

**THERE'S LESS THAN** a $200 difference between the three monochrome printers. Different markets? Not in our book.

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## Buzzing in Agreement

I agreed with John C. Dvorak in his January column ("Buzz Off," page 79). I was a devoted IBMer for ten years and really loved the company and my job. But then I became disenchanted with poor management, bad decisions, and unending bureaucracy. When IBM reduced its workforce, it did not look at an individual's training record or background. People were simply eliminated. This is just one example of IBM's poor decisions. IBM was a great leader in the past, but it will take more than one person to change the direction of this Big Blue ship. Right now, it's a ship at sea with no compass.

JERRY TEW
VIA THE INTERNET

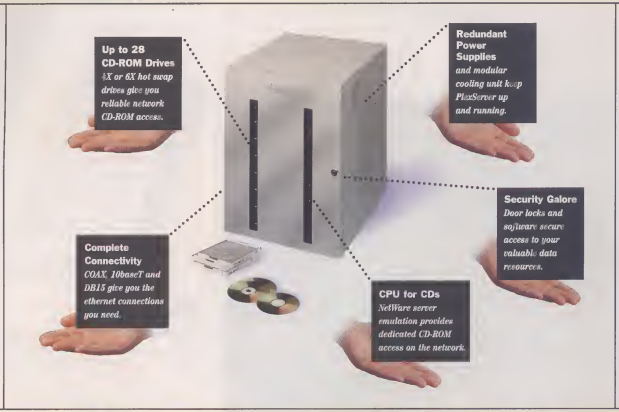
## IBM Talks Back

I feel compelled to respond to John C. Dvorak's editorial in your January issue. I'm proud to be an IBM employee. Individuals like Dvorak fuel narrow-minded misconceptions concerning IBM's participation in the computer industry. Perhaps Dvorak should take a close look at the across-the-board increases in IBM's 1995 earnings report. IBM is turning things around with folks from the grassroots technical level to the CEO position. A lot of people are very happy to work there. But one could never conclude that from reading Dvorak's column. Fortunately, I'm in a position to see the facts.

PAUL A. WOJCIAK
VIA THE INTERNET

*Network Perfect CD-ROM PlexServer*

# It Serves You Right.

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## Tune In to PCs

I disagree with Ian Michaels' letter in your January issue ( "CD-ROMs vs. VCRs," Mail, page 25). I'm an undergraduate at Case Western Reserve University. My classmates and I regularly gather around my computer monitor in the evenings to watch television—thanks to Reveal's TV500 card. We see no reason why this trend would not continue with steadily decreasing cost and increasing availability of the requisite hardware. A computer that doubles as a television is convenient, especially with space restrictions like those in a college residence hall.

TERENCE WEI
VIA THE INTERNET

## Feast for the Eyes

I want to say that of all the computer magazines I receive each month, yours is the one in which I find the most interesting and useful articles. *PC Computing* has lots of information in an easy-to-read format. I am not a technical person, and I find every issue full of a lot of down-to-earth, basic information. Keep up the good work!

JACK NEYMARK
VIA THE INTERNET

## Don't Bug Windows 95

People keep talking about the bugs in Windows 95. True, Windows 95 has bugs. All commercial software and shareware have bugs. However, if you consider the size of Windows 95 before comparing it with other programs, you'll see that Windows 95 has fewer bugs per million lines of code than any other operating system or application of similar size. I ran into more bugs in one Windows 95 application than I have seen in Windows 95 since I received a beta version of it in the mail in November 1994. The final version is not bug-free, but then again, real life hasn't been fully debugged, either.

CHRISTOPHER L. ESTEP
VIA THE INTERNET

## Aloha and Thanks

Aloha from Moloka'i! Imagine my surprise when I saw molokai.com listed in the travel section of your feature "The 1,001 Best Web Sites" (December 1995, page 121). Thank you very much for choosing our island. It feels very good to be selected, and this highlight is a note of encouragement to us to keep on improving. *Mahalo nui loa!*

STEVE REIFF
VIA THE INTERNET

## For the Record

In our February review "Network-Ready Pentium Power" (page 76), we incorrectly identified Hewlett-Packard's line of network-ready Power PCs. The correct designation for Hewlett-Packard systems that come with a built-in Ethernet controller is the Vectra XM Series 3.

WHAT WOULD YOU ASK BILL GATES? Send your thoughts about this and other subjects to Mail, *PC Computing*, 950 Tower Lane, 19th Floor, Foster City, CA 94404; fax: (415) 578-7059; Internet: 72241.1724@compuserve.com; or CompuServe: 72241,1724. Letters are subject to editing for length and clarity.

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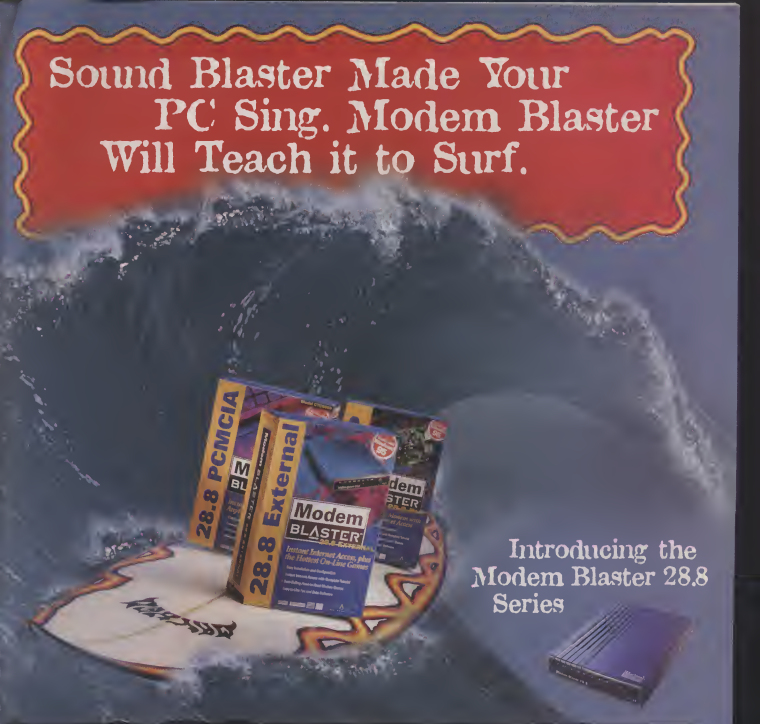
# Sound Blaster Made Your PC Sing. Modem Blaster Will Teach it to Surf.




## Superb quality. Dependability. High performance. Compatibility. Unbeatable software value. That's what made Sound Blaster #1.

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**Modem Blaster 28.8 Hardware Features**

- 28,800 bps, V.34 modem
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- V.42 and MNP 2 - 4 error correction
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**Modem Blaster 28.8 Plug & Play** — The perfect high speed solution for hassle-free, jumper-free, stress-free modem connectivity. A dream come true for Windows 95 enthusiasts.

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- Integrated 3Com EtherLink III
- 3 Year Warranty

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Product Code #300108

**DELL OPTIPLEX GX 5133M**
133MHz PENTIUM PROCESSOR

- 16MB EDO RAM/1GB HDD
- 15TX Monitor (13.7" v.i.s., .28NI)
- Integrated 3Com EtherLink III
- Integrated Audio
- 3 Year Warranty

**$2671**

Product Code #300877

**DELL OPTIPLEX GX 5166M**
166MHz PENTIUM PROCESSOR

- 32MB EDO RAM/1.6GB HDD
- 15TX Monitor (13.7" v.i.s., .28NI)
- Integrated 3Com EtherLink III
- Integrated Audio
- 3 Year Warranty

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Parallel Tasking

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Microsoft Windows 95

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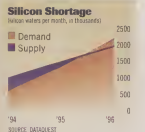
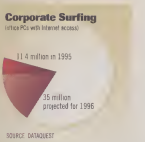
# Pulse

## Digital Receptionist,

**Office Everywhere:** With portable-computer sales projected to nearly triple in the next six years, *telecommuting* is fast becoming the watchword of the decade.




**PC Price Increase:** For the first time in recent history, PC prices may go up due to an impending shortage of silicon used to make computer chips and semiconductors.




**Internet Access:** The number of office PCs with Internet access will more than triple in 1996, with 21.7 percent of all office machines hooked online.

CYBER ASSISTANTS

## Smart Voice Mail

"Wildfire?"

"Here I am."

If only all assistants hopped to attention as quickly at the sound of your voice. Wildfire Electronic Assistant is an intelligent voice-mail system from Wildfire Communications that uses voice-recognition technology to help you communicate with the world. It's the ideal assistant: It's always available, never has a bad day, and is perpetually happy to help. What's more, you don't have to lug around any equipment. It works with any phone; all the technology resides on a Wildfire phone server.

Wildfire is like a human assistant. It knows where you are and how to reach you at all times because you give it your schedule. Wildfire then forwards your calls to any destination, be it your car, your client's office, or a hotel room in Walla Walla. And every Wildfire command is voice-activated—perfect for those sales calls in the midst of traffic. Even better, it knows the names and numbers of each one of your contacts and dials them as quickly as you can say "Call Wendy." It also reminds you of important dates like your wedding anniversary or the client luncheon next Tuesday. How many human assistants live up to such lofty expectations?

All of Wildfire's technology is transparent to callers, who, with Wildfire's help, can leave a message or find out how to reach you directly. But Wildfire's on your side. Avoiding the boss today? It conveniently tells her you're unavailable. But if you're expecting an important call from a client, Wildfire tracks you down.

Sounds amazing, right?

**Take a Message:** Wildfire is a voice-activated assistant that dials numbers for you and screens your calls.

PHOTO ILLUSTRATION BY PETER ALAN GOULD

## UPDATES Best Bets and Bargains

**CONNECT ANYWHERE**
Motorola's $299 Montana is a 28.8Kbps data-fax modem PC Card that supports cellular and pager connections. Contact Motorola at (800) 427-2624.
*Reader Service No. 601*

**WEB SERVER**
Manage your own Web site using WebStar for Windows 95, a powerful, 32-bit Web server for only $399. Contact Quarterdeck at (800) 683-6696.
*Reader Service No. 602*

**SITE METERING**
McAfee's SiteMeter 5.1 tracks concurrent software licenses to help you honor site licenses. Prices start at $21 for 50 nodes. Contact McAfee at (800) 332-9966.
*Reader Service No. 603*

**SPEAK-EASY INTERNET**
Navigate the Internet using voice commands with VoiceCompanion ($29). It's compatible with most browsers. Contact Kolvox at (416) 221-2400.
*Reader Service No. 604*

# Full-length Video CDs

Well, it's definitely not for everyone. For starters, it's not cheap. There are two ways to purchase Wildfire services. You can either invest $45,000 in your own Wildfire server, which accommodates up to 20 users, or you can go with the more likely scenario: Subscribe to Wildfire through a third-party service bureau for about $40 per month. Bear in mind that there are other costs as well. While you get your own toll-free number, calls made or received via Wildfire cost up to $1 per minute—even if you only call your next-door neighbor. Power users will easily spend $400 a month on calls alone.

While Wildfire seems totally unique, several other companies, including AT&T and Pacific Bell, are working on similar technologies. Another option is a human answering service, which costs about $75 a month for 24-hour coverage. But Wildfire has a better memory and is more reliable than any human could ever be. If you need serious communication power today, Wildfire is a great way to go. **KKC and RS**

**Embrace the Web** You have Microsoft's Word, PowerPoint, and Excel, so why not make them Internet-ready? Microsoft is offering free viewers for its top business applications, which integrate with any Web browser and enable anyone on the Internet to view Word, PowerPoint, and Excel files, even if they don't have the app. Get a free viewer at http://www.microsoft.com. **RS**

*Contributors to Pulse:* KYLA K. CARLSON, JAMES OLIVER CURY, SCOTT NAYLOR, *and* RICH SCHWERIN.
*Edited by* JACK LYON.

## Next on CD-ROM: Feature Films

What's the latest in multimedia? **Digital Video Disc (DVD)** is a high-density CD format optimized for storing a **full-length digital movie** on a single disc. DVD promises fast transfer rates, high-resolution video, and more than 18GB of storage. It's also **backward-compatible,** letting it read data CDs as well. One of the first PC-based DVD drives is **Toshiba's SD-1006,** which sells for $599. **RS**

**SD-1006 DVD Drive** / Toshiba America / (201) 628-8000 / $599 est. street price / *Reader Service No. 605*

### Bargain Hard Drives

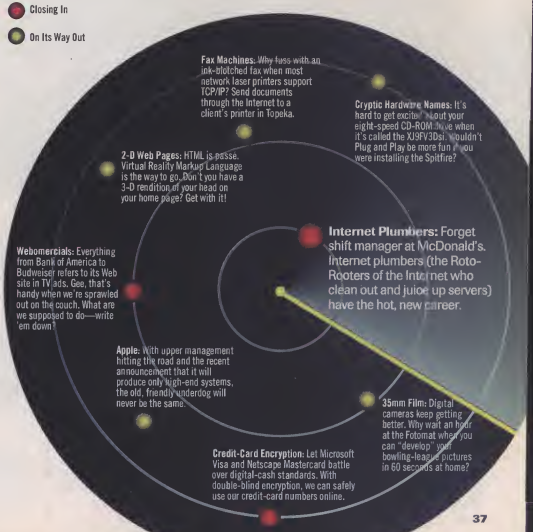
Running out of disk space? Now you can get a 1GB hard drive for $219. Here are the least expensive 1GB or larger Enhanced IDE and SCSI hard drives as of February 6, 1996.

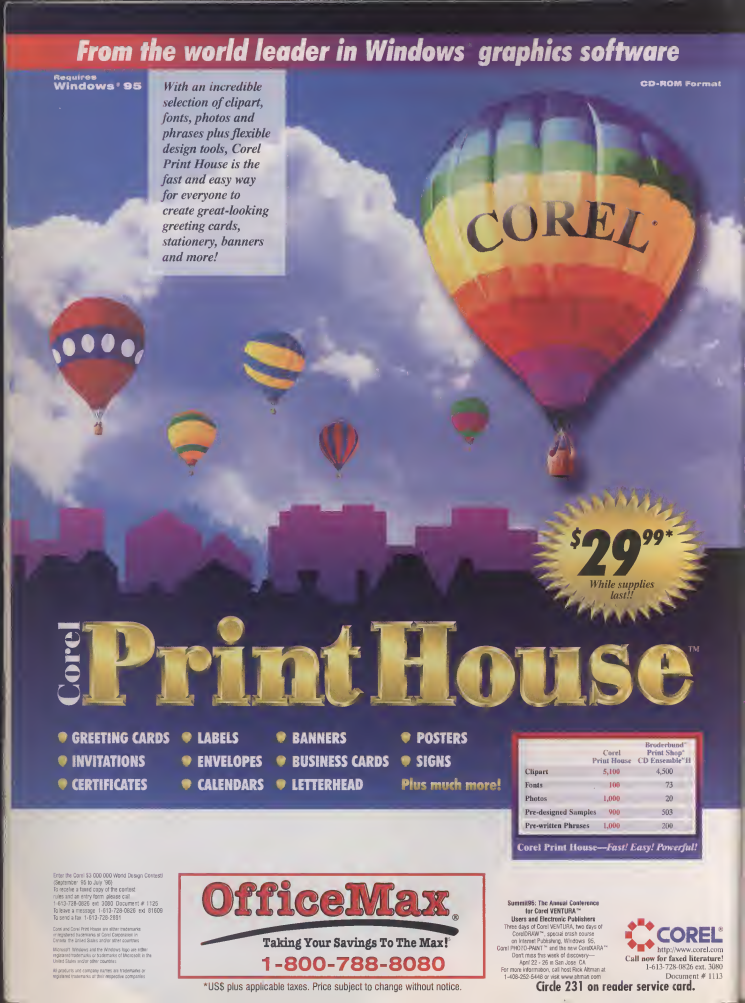
| Product | Price |
|---|---|
| Fujitsu 1606A (EIDE 1GB) *Drive Outlet Center (800) 243-9069* | $219 |
| Western Digital AC31000 (EIDE 1.08GB) *PC Importers (800) 886-5155* | $239 |
| Seagate 51080A (EIDE 1.08GB) *CMO (800) 233-8950* | $219 |
| Fujitsu 1606S (SCSI 1GB) *Drive Outlet Center (800) 243-9069* | $249 |
| Connor CFP 1080S (SCSI 1.08GB) *PC Importers (800) 886-5155* | $279 |

*Reader Service Numbers:* Drive Outlet Center, *606;* PC Importers, *607;* COM, *608.*

## RADAR: Couch Surfing, Internet Plumbing

What's on the scope? If a blip is near or moving toward the middle of the radar screen, check it out. If it's moving off the screen, steer clear for now.




From the world leader in Windows graphics software
Requires Windows® 95
CD-ROM Format
With an incredible selection of clipart, fonts, photos and phrases plus flexible design tools, Corel Print House is the fast and easy way for everyone to create great-looking greeting cards, stationery, banners and more!
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$29.99*
While supplies last!!
Corel Print House™
GREETING CARDS
INVITATIONS
CERTIFICATES
LABELS
ENVELOPES
CALENDARS
BANNERS
BUSINESS CARDS
LETTERHEAD
POSTERS
SIGNS
Plus much more!
Corel Print House — Fast! Easy! Powerful!
Corel Print House
Broderbund™ Print Shop® CD Ensemble™ II
Clipart 5,100 4,500
Fonts 100 73
Photos 1,000 20
Pre-designed Samples 900 503
Pre-written Phrases 1,000 200
Corel Print House—Fast! Easy! Powerful!
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Sweepstakes 95 to July '96
To receive a friend copy of the contest rules and an entry form please call 1-613-728-0826 ext. 3080 Document # 1125
To leave a message 1-613-728-0826 ext. 01009
To send a fax 1-613-728-2891
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# The A-List

Editors' Top Picks by Wendy Taylor

| | | Top Pick | The Buzz | The Stats* | More Info |
|---|---|---|---|---|---|
| Systems | High-Performance Pentium | Dell Dimension XPS P166c | **So fast you may never see the Windows hourglass again. It's priced for mortals, too.** | $3,549, 166MHz Pentium, 16MB RAM, 1.2GB, 6X CD-ROM. | March 1996, page 132 (800) 433-2318 Reader Service No. 618 |
| Systems | High-Performance Pentium Pro | Hewlett-Packard Vectra XU 6/150 | **Power that will rock you back on your heels. Feed it native 32-bit apps only.** | $7,000, 150MHz Pentium Pro, 32MB RAM, 2.1GB hard drive. | March 1996, page 132 (800) 752-0900 Reader Service No. 619 |
| Systems | Desktop Workhorse | Micron Electronics P133 Millennia | **Why compromise? Get the performance you crave and all the extras too.** | $3,048, 133MHz Pentium, 16MB RAM, 1.6GB, 6X CD-ROM. | Sept. 1995, page 106 (800) 615-9197 Reader Service No. 620 |
| Systems | Low-Cost Desktop PC | Dell Dimension P75t | **First-rate features at a cut-rate price—our favorite combination.** | $1,949, 75MHz Pentium, 16MB RAM, 1GB, 4X CD-ROM. | Stay tuned. (800) 433-6675 Reader Service No. 621 |
| Systems | SOHO System | Compaq Presario 9564 | **Command central for any home office—manages your fax, voice, and e-mail messages while you get down to work.** | $3,498, 133MHz Pentium, 16MB RAM, 1.6GB hard drive. | Feb. 1996, page 82 (800) 345-1518 Reader Service No. 622 |
| Systems | High-Performance Workstation | IBM Power Series 850 | **Workstation might meets Pentium prices in this PowerPC rocket.** | $6,796, 133MHz PowerPC 604, 32MB RAM, 1GB hard drive. | Nov. 1995, page 71 (800) 472-7693 Reader Service No. 623 |
| Systems | Pricewise Direct System | Polywell Poly 500P8 | **The most PC for your money—delivered right to your doorstep.** | $2,848, 133MHz Pentium, 16MB RAM, 4X CD-ROM drive. | Jan. 1996, page 132 (800) 999-1278 Reader Service No. 624 |
| Network Servers | | Compaq ProSignia 300 5/90 | **Who needs an information systems department? This server is so well designed, it runs itself.** | $4,128, 90MHz Pentium, 32MB RAM, 2GB hard drive. | Nov. 1995, page 138 (800) 345-1518 Reader Service No. 625 |
| Network Servers | | Digital Prioris LX 590 | **Our labs call it the fastest server to hit our test bench; we call it a great deal.** | $3,249, 90MHz Pentium, 192MB RAM, 4X CD-ROM drive. | Dec. 1995, page 158 (800) 344-4825 Reader Service No. 626 |
| Network Servers | | Compaq ProLiant 1500 | **A reliable anchor for 15 or more network nodes.** | $14,375, 100MHz Pentium, 128MB RAM, two 2.1GB SCSI-2 drives. | Nov. 1995, page 138 (800) 345-1518 Reader Service No. 627 |
| Network Servers | | Hewlett-Packard NetServer 5/133 LS2 | **Two onboard processors and loaded with technical wizardry.** | $25,095, two 133MHz Pentium CPUs, 768MB, five 2.1GB SCSI drives. | March 1996, page 158 (800) 322-4772 Reader Service No. 628 |
| Portables | Portable Desktop Replacement | Toshiba Tecra 700CT | **The follow-you-around office: 120MHz Pentium, removable four-speed CD-ROM drive, and an 11.3-inch hi-res display.** | $5,999, 120MHz Pentium, 16MB RAM, 1.13GB hard drive. | March 1996, page 68 (800) 999-4273 Reader Service No. 629 |
| Portables | Lightweight Traveling Notebook | Toshiba Portégé 610CT | **Take it anywhere: Toshiba's 4.8-pound ultraportable Pentium fits in any briefcase—with room to spare.** | $3,999, 90MHz Pentium, 8MB RAM, 686MB hard drive. | Dec. 1995, page 158 (800) 999-4273 Reader Service No. 630 |
| Portables | Low-Cost Color Portable | Texas Instruments Extensa Model 450 | **All the extras of Dell's Latitude and Toshiba's Satellite—let the price wars begin!** | $1,998, 75MHz 486DX4, 8MB RAM, 340MB hard drive. | March 1996, page 282 (800) 848-3927 Reader Service No. 631 |
| Portables | Multimedia Notebook | Gateway 2000 Solo S90 | **Big, high-resolution screen; removable CD-ROM drive; and wired for sound.** | $4,599, 90MHz Pentium, 16MB RAM, 1.2GB hard drive. | Nov. 1995, page 74 (800) 424-0854 Reader Service No. 632 |
| Portables | State-of-the-art Portable | IBM ThinkPad 760CD | **When you demand the ultimate: full-screen hardware MPEG and a high-resolution 12.1-inch display.** | $6,889, 120MHz Pentium, removable 4X CD-ROM drive. | March 1996, page 183 (800) 426-7255 Reader Service No. 633 |

*ESTIMATED STREET PRICES

# The A-List *Continued on page 42*

| | | Top Pick | The Buzz | The Stats* | More Info |
|---|---|---|---|---|---|
| Desktop Printers | Desktop Laser Printer | Hewlett-Packard LaserJet 5MP | **You can buy a faster laser, but not a better one. Plus, who needs cables? Beam jobs to the IR port instead.** | $950, 6 ppm, 600 dpi, PCL 5 (PostScript optional), infrared port. | Dec. 1995, page 158 (800) 752-0900 Reader Service No. 634 |
| | Low-Cost Color Printer | Canon BJC-4100 | **Low-maintenance, high-quality color—and sanely priced.** | $369, 720-by-360-dpi black, 360-by-360-dpi color. | Feb. 1996, page 140 (800) 848-4123 Reader Service No. 635 |
| | Desktop Color Printer | Hewlett-Packard DeskJet 855C | **Near-laser-quality color output for a tenth of the price.** | $499, 600 dpi, 7-ppm black, 3-ppm color. | Feb. 1996, page 140 (800) 752-0900 Reader Service No. 636 |
| | Portable Printer | Citizen PN60 | **Slip it in your briefcase, then wow clients when you produce color pages on the spot.** | $299, 300-dpi thermal transfer, 1.5 pounds. | Feb. 1995, page 64 (310) 453-0614 Reader Service No. 637 |
| Network Printers | [illegible] | Hewlett-Packard LaserJet 5Si MX | **Even 50-page print jobs fly out faster than you can trot down the hall to claim them.** | $4,000, 24 ppm, 600 dpi, PCL 5e, PostScript Level 2. | Jan. 1996, page 89 (800) 752-0900 Reader Service No. 638 |
| | [illegible] | Tektronix Phaser 340 | **Drop-dead, solid-ink color at just 11 cents per page.** | $4,995, 4 ppm, 600-by-300-dpi black and color. | Dec. 1995, page 158 (800) 835-6100, ext. 1253 Reader Service No. 639 |
| | [illegible] | Hewlett-Packard DeskJet 1600CM | **Churns out brilliant color pages faster than you can produce them.** | $1,999, 9-ppm black, 4-ppm color. | Stay tuned. (800) 752-0900 Reader Service No. 640 |
| Video | High-Resolution 20- or 21-Inch Monitor | Nanao FlexScan T2-20 | **It's like buying orchestra seats for Windows—and worth every penny.** | $2,063, 20-inch, 1,600 by 1,200 pixels, Plug and Play. | Dec. 1995, page 158 (800) 800-5202 Reader Service No. 641 |
| | High-Resolution 17-Inch Monitor | Sony Multiscan 17sf | **Sweet 17-inch deal. Makes Windows look great, too.** | $800, 1,280 by 1,024 pixels at 60Hz. | Dec. 1995, page 158 (800) 352-7669, ext. 119 Reader Service No. 642 |
| | High-Resolution Graphics Accelerator | Matrox MGA Millennium | **Ultrafast Windows RAM and 3-D acceleration make this the graphics accelerator to covet.** | $450, 4MB WRAM, 1,280 by 1,024 pixels at 76Hz, PCI interface. | Dec. 1995, page 158 (800) 583-4353 Reader Service No. 643 |
| Storage | Removable Storage | Iomega Zip Drive | **Chic, purple, and portable. And the cartridges are removable.** | $199, 25MB or 100MB cartridges, SCSI or parallel interface. | Feb. 1996, page 175 (800) 697-8833 Reader Service No. 644 |
| | CD-ROM Drive | NEC MultiSpin 4Xc | **The best bargain around: Queue up seven discs in this quad-speed jukebox for the price of a single-disc drive.** | $349, SCSI interface, seven-disc changer. | Dec. 1995, page 158 (800) 632-4636 Reader Service No. 645 |
| | Hard Drive | Seagate Medalist 2140 | **Be greedy. At these prices, why not get two?** | $530, Fast ATA-2, 10.5ms access time, 2.51GB storage. | Stay tuned. (408) 438-8111 Reader Service No. 646 |
| | Network Storage | Mega Drive Systems MR5 RAID Disk Array | **The best kind of insurance for your network data.** | $11,000, 5GB RAID array. | Nov. 1995, page 186 (800) 404-6342 Reader Service No. 647 |
| Peripherals | Personal Scanner | Visioneer PaperPort Vx | **The quickest way to tame your paper in-box—moves paper off your desk and onto your hard drive in seconds.** | $329, 400 dpi, document-management software. | Jan. 1996, page 92 (800) 787-7007, ext. 102 Reader Service No. 648 |
| | Multimedia Sound Card | Creative Labs Sound Blaster AWE32 PnP | **The ultimate for business multimedia. Great for games, too.** | $200, 32-voice polyphony, 16-bit DSP. | Jan. 1996, page 173 (800) 998-5227 Reader Service No. 649 |
| | High-speed Fax Modem | U.S. Robotics Courier I-Modem | **A bridge to the future—get a 28.8Kbps analog and ISDN modem in one.** | $895, ISDN and V.34 (28.8Kbps). | Feb. 1996, page 78 (800) 877-2677 Reader Service No. 650 |

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Staying organized with PILOT is faster and easier than pen and paper. And better, too, because it's your automatic link to the important personal information on your PC.

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**Circle 297 on reader service card.**

# The A-List *Continued from page 40*

| | | Top Pick | The Buzz | The Stats* | More Info |
|---|---|---|---|---|---|
| Desktop Applications | Software Suite | Microsoft Office for Windows 95 | **The complete business-software suite for Windows 95. Watch for Web-publishing wizards soon.** | $499 (Standard Edition), 28MB to 89MB hard disk space. | Sept. 1995, page 83 (800) 426-9400 Reader Service No. 651 |
| | Word Processor | Lotus Word Pro 96 | **Microsoft's Word comes close, but smart spell-checking and version control give Word Pro 96 the edge.** | $75, Windows 95 or Windows NT 3.51, 8MB RAM. | Dec. 1995, page 158 (800) 343-5414 Reader Service No. 652 |
| | Spreadsheet | Microsoft Excel for Windows 95 | **While Quattro Pro and Lotus 1-2-3 languish in the 16-bit world, Excel steals the 32-bit show.** | $300, Windows 95 or Windows NT 3.51, 8MB RAM. | Dec. 1995, page 158 (800) 426-9400 Reader Service No. 653 |
| | Database | Microsoft Access for Windows 95 | **The database usability and productivity champ—for novices and experts alike.** | $300, 486 CPU, 12MB RAM. | Jan. 1996, page 162 (800) 426-9400 Reader Service No. 654 |
| Desktop Publishing | [illegible] | Microsoft PowerPoint for Windows 95 | **Build a winning sales presentation on your lunch hour.** | $300, Windows 95 or Windows NT, 14MB to 35MB hard disk space. | March 1996, page 183 (800) 426-9400 Reader Service No. 655 |
| | [illegible] | Microsoft Publisher for Windows 95 | **The ultimate vanity press: Create terrific-looking pages without even trying.** | $80, 386 CPU, 8MB RAM, 6MB hard disk space. | Dec. 1995, page 158 (800) 426-9400 Reader Service No. 656 |
| | [illegible] | QuarkXPress 3.31 for Windows | **Produces pages as slick as the ones in your hands. PageMaker shops should check out PageMaker for Windows 95.** | $600, 486 CPU, 8MB RAM, 12MB to 15MB hard disk space. | Dec. 1995, page 158 (800) 788-7835 Reader Service No. 657 |
| | [illegible] | CorelDraw 6 | **The all-in-one graphics toolkit for Windows 95: Draw, edit, and design your own masterpieces.** | $450, Windows 95, 486 CPU, 8MB RAM. | This issue, page 101 (800) 772-6735 Reader Service No. 658 |
| | [illegible] | Adobe Photoshop 3.0 for Windows | **A digital darkroom for your PC. This just in: a Windows 95/Windows NT upgrade.** | $549, 486 CPU, 8MB RAM, 20MB hard disk space. | This issue, page 101 (800) 833-6687 Reader Service No. 659 |
| Finance | Personal Finance | Intuit Quicken Deluxe 5 for Windows | **Never visit a bank again—this is branch-office checking from your hard drive.** | $60, 386 CPU, 4MB RAM, 7MB hard disk space. | Feb. 1996, page 159 (800) 624-8742 Reader Service No. 660 |
| | Business Accounting | Intuit QuickBooks Pro 4.0 | **Cheaper than your average accountant, and a lot easier to understand.** | $160, 486 CPU, 4MB RAM, 12MB hard disk space. | Feb. 1996, page 92 (800) 624-8742 Reader Service No. 661 |
| Communications | Fax-Communications Software | Delrina CommSuite 95 | **One launchpad for all your Internet needs. Sends e-mail and faxes, too.** | $99, 486 CPU, 8MB RAM, 30MB hard disk space. | Nov. 1995, page 83 (800) 441-7234 Reader Service No. 662 |
| | Web Browser | Netscape Navigator 2.0 | **Still the best way to explore the Web. Download the new Windows 95 version from ftp://ftp.netscape.com.** | $49, Windows 95, 4MB RAM, Internet access. | Jan. 1996, page 108 (800) 638-7483 Reader Service No. 663 |
| Tools and Utilities | Antivirus Software | Symantec Norton AntiVirus for Windows 95 | **Fast and painless virus-hunting for Windows 95 and Windows 3.x.** | $79, Windows 95, 486 CPU, 8MB RAM. | Oct. 1995, page 116 (800) 441-7234 Reader Service No. 664 |
| | Project Management Software | Microsoft Project for Windows 95 | **Takes the work out of teamwork—the easy way.** | $469, Windows 95, 386 CPU, 20MB hard disk space. | Dec. 1995, page 158 (800) 426-9400 Reader Service No. 665 |
| | System Utility | Symantec Norton Utilities for Windows 95 | **Resuscitates dead files and diagnoses hardware problems before they happen. Everyone should have a copy.** | $90, Windows 95, 486 CPU, 8MB RAM. | Dec. 1995, page 158 (800) 441-7234 Reader Service No. 666 |
| | Reference | Vicarious Our Times | **The best crash course in 20th-century history we've ever taken. Don't miss it.** | $70, Windows 3.1, 486 CPU, 8MB RAM, CD-ROM. | Feb. 1996, page 301 (800) 465-6543 Reader Service No. 667 |

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# Get What You Want With Magnavox.

With a full-range of smart features, Magnavox has everything you're looking for in a monitor. Available in 14", 15", 17", 20" and 21" screen sizes (12.86", 14.33", 16.22", 19.5" and 19.68" viewable image sizes) there's one to fit your needs. Built to last and backed by a 3-year warranty*, it's no surprise Magnavox has become one of the world's largest monitor manufacturers. For everything you've always wanted in a monitor, visit your retailer or call 1-800-835-3506.

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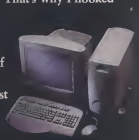
# *I marched on Washington and never left home.*

People in my neighborhood call me the "Million-Aspire. To Do More.
and-First Man." Because these days, I'm into
progress. And empowerment. That's why I hooked
up with the Acer® Aspire.™



It helps me do more, for myself
and my community. I don't just
talk change and betterment,
I make it happen. Starting with my own business
plan. And the grant proposal that brought in
*A few more things*
start-up capital. All done with software that came
*I can do with my Aspire:*
preloaded on Aspire. Aspire also helps me take the
*Learn more about black history.*
word out to the streets. I use the powerful internal
*Access libraries around the world.*
fax modem to get politically involved. I get young
*Lobby my Congressman via e-mail.*
minds to open up with the high-speed CD-ROM
*Organize a church fundraiser.*
and the power of multimedia. They like the music
*Help local kids apply for scholarships.*
and the video, and the way Aspire looks. I like the
*And cruise around the Internet.*
message it sends. Aspire is truly a positive influence.

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Intel Inside pentium

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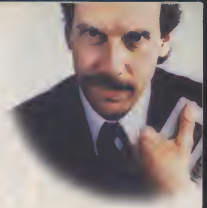
Circle 167 on reader service card.

# Paul Somerson



# Bye, Netscape

One of Johnny Carson's best shticks was Carnac the Magnificent. Dressed in a ratty Swami's turban and cape, Carson would read out jokey answers and, as Ed McMahon **CACKLED ANNOYINGLY IN THE BACKGROUND,** would open envelopes revealing the questions. If Carnac were around today and talking about PCs, this routine would be vastly simpler: The answer to every question would always be "The Internet."

Take operating systems (puh-*leeze*). DOS drove people around the bend, since they were too lazy to learn the half-dozen commands needed to do most essential tasks. Windows 3.*x* stole enough Macintosh features to let users stumble through everyday chores by pointing to colorful little onscreen pictures, a process similar to one **USED BY PRIMATE RESEARCHERS TO COMMUNICATE WITH CHIMPANZEES,** or icon-based McDonald's cash registers to let illiterate cashiers ring up Happy Meals.

The Windows 95 interface wasn't much of an improvement. It added a few shiny **LAYERS OF CHROME** and some more buttons and gizmos, but it was hardly the intuitive usability breakthrough buyers needed.

So what's the answer? As Slick Willie would say, it's the Internet, stupid. Once the Web started creating **ANOTHER GENERATION OF 25-YEAR-OLD BILLIONAIRES,** Bill Gates got tired of listening to clueless windbags predicting the demise of the operating system and Microsoft itself, and in late 1995 announced that from now on, every Redmond product would sparkle with Internet pixie dust.

For applications, this doesn't mean much more than making it easier to look up data remotely or share documents. But for operating systems, it's a sea change. The next Windows interface will look, feel, and smell like a Web browser. Instead of wrestling with terse, tiny icons or the **PATHETIC, PATIENCE-STRAINING** Explorer, users will find what appear to be Web pages. Score another coup for Microsoft.

A browser interface makes Windows far simpler to navigate and use. Each natural grouping (a bunch of related files or folders, for instance) can be on its own page, along with informative graphics. Each page can have its own text descriptions, help, and task-related buttons. All the text can link to other pages or more detailed assistance. And links or "favorite places" lists can point to other pages, help entries, drives, files, or—and here's the Gates genius—to Web sites.

Which means **SAYONARA, NETSCAPE.** When the main interface you stare at all day long is a browser that does all your OS dirty work and also happens to connect you to any Web page seamlessly and instantly, why on Earth would you load anyone else's browser? And Gates recently drove the point home by offering his NT-based Internet server at a price Netscape will find hard to match: free.

Once again, the answer is "Microsoft." The question is, "Why did it take so long?"

PHOTOGRAPH BY JAMES McGOON

# Cruise the Internet as fast as modemly possible.

The U.S. Robotics Sportster is the fastest, most reliable modem you can buy. For compatibility, connectivity and cumulative throughput, the Sportster proved to excel well beyond its nearest competitors in two separate and equally uncompromising independent lab tests. And during this incredible comparative exhibition, it not only outperformed other 28.8 Kbps modems, it outperformed the ratified standard for speed by working beautifully in a 33.6 Kbps mode.

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# John C. Dvorak

# Total Recall

One of the least-covered news stories of 1995 was a curious code exchange between Microsoft and Novell. This gave Microsoft the rights to, of all things, CP/M, CP/M-86, and GEM (Digital Research's old GUI that was an early competitor to Windows, and used in some form on 68000-based Atari machines).

Microsoft also tried to get the code base for the Amiga operating system from Commodore, according to someone working on a low-end machine Microsoft is developing in conjunction with IBM. Code-named Paris, the product looks like a cheap Web-oriented terminal.

If you start looking into this, you'll see what Microsoft is up to. The company does not intend to manufacture the Webterm, but to license it in much the same way as Oracle's Web computer. But Microsoft and its PR arm, Waggener Edstrom, put a lid on this development because the project is an embarrassment. The last time they put spin control on an event was when Bill Gates appeared before the Washington State Legislature to promote the proposed WSB-1181 bill, which would make it mandatory to teach hexadecimal mathematics in grammar school. Like this was going to get a single vote. [Actually, it received five!—*Ed.*]

Any embarrassment here stems from the fact that this Web machine will be based on a new line of high-speed Z-80s. But it needs an 8-bit operating system, and CP/M is it. Apparently an 8-bit version of GEM was developed, too—although it was never released—and that's what Gates & Co. wants for this computer. Its backup is the Amiga operating system, which still has an 8-bit core. A Microsoft employee told me that the decision to go 8-bit was made at the highest level, meaning Gates.

Since last June, Gates has had an old Cromemco CP/M machine with a Perkin-Elmer terminal on his desk, which he uses to answer e-mail and compose his weekly musings for Microsoft's in-house BBS, the Bill-Board. He's been playing with various Windows-like interfaces, including a kludged version of GEM. His machine has a second monitor that's jury-rigged to a special 8-bit graphics card that the people at S3 designed and built especially for him. Apparently anyone talking to Bill these days gets an earful about the advantages of 8-bit computing (small words, small code size, speed) when it comes to the Internet.

But he's not the only one thinking along these lines: The Internet group at IBM seems to be involved with Microsoft, and has two 8-bit projects underway itself. One is a licensing deal for the Paris machine. The other is a complete redesign of the shelved PowerPC 615. The 615 was supposed to incorporate the x86's instruction-set at the chip level, along with PowerPC's instruction and powerful floating-point circuitry. Both IBM and Motorola had problems with the 615 and decided to divert their talent to Motorola's 4196—an 8-bit PowerPC chip based on the 615. The 4196 chip incorporates a Z-80 instruction set and can run the 8-bit software of the future, as well as do something called half-word computing.

*Gates & Co.'s* **WEBTERM** *is based on high-speed* **Z-80s**. *IBM and Motorola just redesigned the* **POWERPC** *to run 8-bit software. And DEC's* **4-BIT ALPHA** *even rivals* **133MHz PENTIUMS.**

Half-word computing is the current buzz in the Internet community, and Netscape is supposed to incorporate something called a half-word burst mode in its 3.0 release of Navigator. This is supposed to expedite data transfers, especially graphics, and reduce load time. To make things even weirder, Credibility, Inc., a Palo Alto–based company, proposed a 4-bit machine using quarter-word abilities and a reduced ASCII word set that detractors call "half-ASCII." Microsoft is part-owner of the company.

If you ask around, most observers say current 4-bit processors don't have enough horsepower. But Intel publicly announced that it is researching the possibility of redesigning the original 4-bit microprocessor—the 4004—with a RISC architecture. Also, DEC said it ran simulations on a 4-bit Alpha processor that "compare favorably" with the performance of a 133MHz Pentium. A friend of mine explained how effortlessly Microsoft could detune Windows NT, reduce its word size to 4 bits, and port it to the 4-bit Alpha chip. "Probably take two months at the most."

At a recent ACM Microprocessor Summit, someone presented a slide, "The Modified Moore's Law Converse Curve," which shows that halving the bit length will double performance to infinity minus 1. In theory, 1/32-bit computing approached Cray XMP performance, although there was no practical way to make such a chip. In fact, only one successful 2-bit microprocessor has ever been designed—built for the U.S. Department of Defense by Harris Semiconductor. But if performance is any indicator, commercial 2-bit processors will arrive before the turn of the century. Internet growth and the incursion of newbies and know-nothings will also create a huge demand for 2-bit operating systems, applications, and computers. Count on it.

And for those of you with a hexadecimal education, know this: 61 70 72 69 6C 20 66 6F 6F 6C 73 20 64 61 79.

PHOTOGRAPH BY JAMES McDOON

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*PC Magazine*, April 25, 1995

PC MAGAZINE EDITORS' CHOICE

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intel inside pentium

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PC MAGAZINE EDITOR'S CHOICE — May 19, 1995 — Review: MPC P100

PC WORLD — July 1995 — Review: MPC P100

PC WORLD — September 1995 — Review: MPC P100

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- Microsoft Mouse, 104-key keyboard
- Microsoft Windows 95 CD
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- With 133MHz Pentium processor.....add $100

PC MAGAZINE EDITOR'S CHOICE — June 28, 1994 — PowerStation P90

PC WORLD — May 1995 — PowerStation P90

## MAGNUM PRO180

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- 256K internal cache, flash BIOS
- 6X EIDE-2 CD-ROM drive, 3.5" floppy drive
- SoundBlaster 16 stereo sound & speakers
- PCI 64-bit video, MPEG, 2MB EDO
- *Tool-free* mini-tower or desktop
- Microsoft Mouse, 104-key keyboard
- Microsoft Windows NT Workstation 3.51 CD
- Microsoft Office Pro 95 & Bookshelf 95 CDs
- 5-year/3-year Micron Power warranty*

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**$3,699** Business lease $126/month

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- With 200MHz Pentium Pro processor.....add $200

## MAGNUM PLUS PRO200

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- PCI 32-bit Ultra SCSI Fast-20 controller
- 6X SCSI-2 CD-ROM drive, 3.5" floppy drive
- SoundBlaster 16 stereo sound & speakers
- PCI 64-bit video, MPEG, 2MB EDO
- *Tool-free* mini-tower or desktop
- Microsoft Mouse, 104-key keyboard
- Microsoft Windows NT Workstation 3.51 CD
- Microsoft Office Pro 95 & Bookshelf 95 CDs
- 5-year/3-year Micron Power warranty*

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• 15" Micron 15FGx, .28dp (13.7" display)
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**$6,899** Business lease $235/month

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Best Buy — PowerStation SMP P133

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Circle 106 on reader service card.

# New!

## Hewlett-Packard Color LaserJet 5

# Color for the Whole Office

SNEAK PREVIEW

Choosing a color laser printer is a thankless job. This one is faster, that one has better output, and yet another costs less. To make the decision a little easier, Hewlett-Packard's new Color LaserJet 5—the latest upgrade to the Color LaserJet—is about to hit the streets. It's not the fastest printer in the world, nor is it the least expensive. It does, however, have some special qualities that might be exactly what you need.

As with its other printer lines, HP offers two flavors of its Color LaserJet: the 5 and the 5M. Each ships with the same engine, which supports up to 10 ppm for black output and 2 to 3 ppm for color. The differences? The Color LaserJet 5 ships with 20MB of RAM. The 5M, on the other hand, ships with PostScript Level 2, 36MB of RAM, and Ethernet and LocalTalk networking interfaces. You can add these features as upgrades to the Color LaserJet 5. Token Ring network options are available for each printer.

The Color LaserJet 5 costs much less than the original LaserJet: $5,995 compared with $7,295. But you're not trading quality for the lower price. Rather, you'll find improved continuous-tone output quality and a faster processor.

On the outside, the printer looks the same as before. But inspect closely and you'll find signs of HP's efforts to enhance print quality. The true resolution of the Color LaserJet 5 is just 300 dpi. Competing printers from Apple, Lexmark, Tektronix (which all sport a Canon engine) and QMS and Xerox (which have a Hitachi engine) all have true 600-dpi output. Don't be fooled by the Color LaserJet 5's lower resolution, though. With resolution enhancement, HP can boost the resolution to the equivalent of 1,200 dpi, which shows in the Color LaserJet 5's crisp output.

But if you were hoping for a color laser printer that's smaller than the behemoths you're used to, look elsewhere. In fact, the Color LaserJet 5's footprint is larger than that of the models from Apple, Tektronix, and Lexmark.

Once you find a place to put this monster-size printer, you'll learn that the Color LaserJet is also tricky to set up. There are several options to install, and the documentation isn't always clear about where things should go. We muddled through and got the printer running in about 30 minutes. Software installation was a breeze, just as we expected.

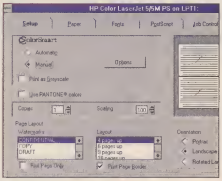
The Color LaserJet 5M's output was inconsistent. For charts and presentation graphics, the output was outstanding. Colors were sharp and vibrant; lines were crisp and defined. We were especially impressed with white text against a black background. The toner didn't bleed, and the text was the sharpest we've seen from a color laser printer. Black text output was also top-notch.

Photographic output, however, was a different story. While texture and definition were nice, flesh tones were excessively pink. When we changed the software settings to get better results, we barely noticed a difference. For photographic output, you're better off going with Apple's Color LaserWriter 12/600 PS or Tektronix's Phaser 550.

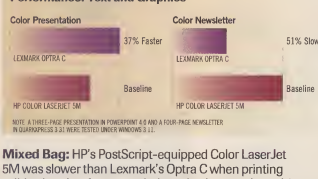
**Give and Take** Lexmark's Optra C is the printer to beat for speed, and the Color LaserJet 5M didn't quite measure up in most tests. In our text-document test, the Optra C was about 45 percent quicker. The Color LaserJet 5M performed a little better with 3-page presentations, but the Optra C was still 37 percent faster. However, when we printed a 4-page newsletter that contained graphics on the first page, the Color LaserJet 5M was more than 50 percent faster than the Optra C.

If you compare the Color LaserJet with other color lasers, its performance is snappy. With its 10-ppm engine, the Color LaserJet 5M printed significantly faster than printers from Apple, Tektronix, and Xerox in

## OVERVIEW Design Details




**Printer Smarts:** The Color LaserJet 5's drivers let you print a watermark with your document, or print up to 16 reduced pages on one sheet of paper.




**Mixed Bag:** HP's PostScript-equipped Color LaserJet 5M was slower than Lexmark's Optra C when printing solid colors, but faster at printing mixed text and graphics.

## Guide to PC Computing's Ratings

**Excellent** *Market leader that offers exceptional performance* ..... ☆☆☆☆☆

**Good** *Excels in many areas; a good buy* ..... ☆☆☆☆

**Acceptable** *Average for its class; a justifiable purchase* ..... ☆☆☆

**Poor** *Out of date or substandard; offset by some positive features* ..... ☆☆

**Unacceptable** *Missing necessary features; avoid* ..... ☆

**High-Impact Color:** Hewlett-Packard's new Color LaserJet 5 printer uses a 300-dpi print engine, but with software resolution enhancement it produces sharp and vibrant output equivalent to 1,200 dpi. The LaserJet 5M adds Ethernet support and PostScript Level 2.

our presentation, newsletter, and text-document tests.

The cost per page for the Color LaserJet is competitive. Black coverage at 5 percent is about 1.8 cents per page. Color costs are also low. For a page with 50 percent coverage, you'll spend only about 20 cents if you use plain paper. And one major benefit of color laser technology is that you needn't waste precious pennies on special paper to boost your output quality.

**Bottom Line** Color laser printers are fast, their cost per page is low, and they handle black-text pages as easily as color. But choosing which color laser to buy requires some hard choices. Apple's Color LaserWriter 12/600 PS is a tough printer to beat. Its list price is a bit higher than the Color LaserJet 5's, and about a grand less than the Color LaserJet 5M's. However, Apple's printer is the best overall value with 600-dpi output and Ethernet and AppleTalk support by default.

You could call the Color LaserJet 5 a happy medium. It's faster than Apple's Color LaserWriter 12/600 PS, has better graphical output than Lexmark's Optra C—and costs less than either of them. However, if you plan to put your printer at the end of a network, the Color LaserWriter 12/600 PS is a better value than the Color LaserJet 5M.

If you produce mostly text documents with just splashes of color, you can't go wrong with HP's Color LaserJet 5. Its text output is the best we've seen, and it does a nice job of handling simple graphics. But if you print lots of photographs and color, and you can't afford to shell out big bucks for a dye-sublimation printer, your money would be better spent on Apple's Color LaserWriter 12/600 PS, Lexmark's Optra C, or Tektronix's Phaser 550. **KYLA K. CARLSON**

**Trade-offs:** The Color LaserJet 5 and 5M do an excellent job of handling solid colors and business graphics. The photographic resolution is nice, but we were disappointed with the excessive pink shades of flesh tones.

### FILEBOX

**Color LaserJet 5**

☆☆☆☆

**Verdict:** An affordable color laser that does a fine job with text and simple graphics—but photo images could be better.

**Pros:** Produces outstanding text output, and handles presentation documents nicely.

**Cons:** Photographic output is not up to par with that of competitors—flesh tones are too pink. Speeds are competitive but not stellar.

**Configuration Options:** The Color LaserJet 5M costs $1,300 more and comes with 36MB of RAM, PostScript Level 2, Ethernet, and LocalTalk.

**Features as Tested:** PostScript Level 2, 36MB of RAM, Ethernet, and LocalTalk.

$5,995 for the Color LaserJet 5; $7,295 for the Color LaserJet 5M
Hewlett-Packard
(800) 527-3753
*Reader Service No. 688*

PHOTOGRAPH BY ARNOLD TROSLIO

# Deciphering the easiest way to network your Windows-based PCs will require, among other things, a keen sense of the obvious.

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| | Windows NT Server | NetWare |
|---|---|---|
| **Everything you need in one box** | √ | no |
| **Familiar Windows environment** | √ | no |
| **Street price for a 10-user server*** | $999 | $1622 |

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## Iomega Jaz Drive

# Get a Gigabyte To Go

You thought the Zip drive was cool? Child's play. After months of hype, Iomega's Jaz drive is finally hitting the street, and it lives up to its promise of providing hard drive performance using low-cost, removable 1GB cartridges. The only downside to this revolutionary product is getting your hands on one: Finding a Jaz drive will be like scoring a Cabbage Patch doll at Christmastime. But if you need removable storage, or are looking for an economical way to store several gigabytes of data, hunt one down.

**Beyond Backup** Unlike the Zip drive, the Jaz isn't limited to data backups. Actually, it doesn't even use the same media type. Rather than the Zip's floppy-disk-on-steroids model, each Jaz cartridge uses standard 3.5-inch Winchester hard-disk technology. In other words, the Jaz is like your basic hard drive. You can use it, just as you would any normal hard drive, to run applications, digital video, or even your entire system. Our tests revealed that the Jaz drive's performance is comparable to that of any top-of-the-line hard drive with a data-transfer rate of up to 10MB per second. The Jaz drive's overall performance scores were only slightly below those of Quantum's speedy ProDrive.

**Megs on the Move** But the real news is the Jaz's portability. The entire drive weighs a mere two pounds, and the included software makes it fairly simple to switch the drive among several machines. The cartridges have an antirattle feature that protects data platters from physical damage.

The Jaz drive's technology mimics that of the longtime removable-storage king, the SyQuest. But the Jaz drive's performance leaves the SyQuest and other forms of removable media, including magneto-optical drives, in the dust.

It reads and writes data at more than twice the speed of a basic SyQuest drive, and it's over four times faster than a magneto-optical drive. Expect to spend just $12 per megabyte if you buy your cartridges in large quantities.

Without a doubt, the Jaz is cool. But do you really need one? That depends. If you only occasionally need to share small files between your home and office systems, for example, a remote-control package like Symantec's Norton pcAnywhere32 or Traveling Software's LapLink will most likely do the trick (see "Dial Up Your Desktop," March, page 120). And if you can't imagine ever needing more than a gigabyte or two, there's really no point in spending the extra money for portability. There are plenty of lightning-fast 1GB-or-better magnetic hard drives from the likes of Seagate and Quantum for half the price of the Jaz.

However, if you need a cost-effective solution for moving around large amounts of data, the Jaz drive is ideal. It's currently the only storage system that offers the speed of a hard drive, plus the convenience of portability. The only problem you'll have is finding one of these on store shelves. JACK LYON

**Take It with You:** Iomega's Jaz drive—a low-cost 1GB removable storage device—has finally arrived. With a transfer rate of up to 10MB per second and a cost of around $12 per megabyte, it's likely to end up like Iomega's Zip drive—nearly impossible to find.

**Almost as Fast as a Hard Drive:** The Jaz drive's performance is comparable to that of any top-of-the-line fixed hard drive, such as Quantum's ProDrive.

**FILEBOX**

**Jaz Drive**

★★★★★

**Verdict: Excellent speed, performance, and portability at an affordable price.**

**Pros:** Near-hard drive speeds and removable cartridges.

**Cons:** You'll want two if you often shuttle data between locations, but finding them on dealers' shelves will be tough.

**Competition:** Various SyQuest and magneto-optical drives offer portability, but they're half as fast. Various stationary magnetic hard drives from Seagate, Quantum, and others are the real competitors, offering better performance at much lower initial prices.

**Media:** $99 per 1GB cartridge; $50 per 275MB cartridge.

**Features as Tested:** Fast SCSI-2 interface (IDE versions available), 1GB cartridge (275MB cartridges available).

$599 est. street price
Iomega Corp.
(800) 697-8833, (801) 778-1000
*Reader Service No. 671*

PHOTOGRAPH BY ARNOLD TOSELIO

*Guide to the Ratings:* ★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

# Systems That Defy the Future

SNEAK PREVIEW

Deep-six your motherboard? Yeah, right. Don't dismiss the idea out of hand. It's exactly what The Panda Project has done with its spanking new Archistrat 4s Server. Not only is the machine entirely CPU-independent, but its 64-bit data bus can also be upgraded to 128-bit—or 256-bit.

The Archistrat is more than a new iteration on an old daughtercard design. The machine uses a passive backplane technology designed around a novel high-density connector called Compass. With almost ten times as many contacts per square inch as traditional circuit boards, Compass connectors don't suffer the data input-output bottlenecks typical of daughtercard devices.

Because both CPUs and buses can be upgraded on the Archistrat Server, you won't have to throw the baby out with the bathwater every time a new generation of processors promises to make your server obsolete. As such, you can depreciate the cost of the machine over a longer period of time by upgrading just the necessary components. And this will keep the folks at the high end of your company's food chain happy.

**Universal Architecture:** Looks set the Archistrat apart from ordinary servers, but that's not all: Its CPU and bus are upgradable—even across platforms. Panda is also working on workstations with this design.

**Quick Change** The Archistrat 4s comes with a 166MHz Pentium processor and 512K L2 cache. It features 32MB of RAM (expandable to 256MB), and 4GB of hard disk space. Adaptec's PCI SCSI-2 controller supports up to seven Fast-SCSI drives as well as three internal drives—a quad-speed CD-ROM drive and DAT backup drive are standard equipment. There are six PCI slots and four ISA slots. The total price tag: $12,400.

This appears to be standard inventory for any high-end server. But leaving aside the ability to upgrade the Archistrat's configuration to DEC's Alpha, a Pentium Pro, or, soon, a PowerPC, the machine shows splendid innovation in its physical architecture. For example, drives reside in a separate chamber within the chassis and feature their own four-fan cooling system. The passive back plane, memory, and expansion cards use a separate two-fan cooling system. With a 400-watt power supply and six whirling fans, the Archistrat 4s whines like a Boeing 737.

The Archistrat's design is also unusual and futuristic: Press a button, and the front panel electrically slides down to reveal the external drives, which are stacked in a staircase for easy access. Even the Archistrat's looks set it apart: The front of the tower has a sweeping concave curve. The machine comes in a rainbow of colors. It's a downright handsome piece of office furniture.

**Make It Personal** The Panda Project knows that single users can make a good case for putting this technology on their desktops. Before the year's end, the company plans to release a graphics workstation based on DEC's Alpha CPU. Take *that*, Silicon Graphics. When asked whether businesspeople will ever see Archistrat technology in a single-user box, company officials smiled widely and demurred. It's a safe bet, but no one is willing to venture a timetable.

Could the PC price wars take the wind out of the company's sails? After all, buying a new CPU, video card, and logic chip costs almost as much as buying a faster PC outright. Certainly the server market stands to gain more from the technology than single users do—at the outset. But The Panda Project's Compass connector is one of the most important PC innovations since the enhanced parallel port. It might be the one technology that finally halts the infuriating six-month cycle of obsolescence that hits us all. MARTY JEROME

## FILEBOX

**Archistrat 4s Server**

★★★★

**Verdict: A universal server that grows in power with your network.**

**Pros:** Fully upgradable—swap in DEC's Alpha, a Pentium Pro, or a PowerPC processor, and upgrade the 64-bit data bus to 128-bit or 256-bit in the future.

**Cons:** An expensive hedge against server and desktop obsolescence.

**Features as Tested:** 166MHz Pentium; 512K L2 cache; 32MB of RAM (expandable up to 256MB); PCI Fast SCSI-2 controller that supports up to seven Fast SCSI drives and three internal drives; 4GB hard drive; quad-speed CD-ROM drive; PCI Ethernet adapter; DAT backup drive.

$12,400 est. street price
The Panda Project
(800) 586-6867, (407) 994-2300
*Reader Service No. 672*

PHOTOGRAPH BY ARNOLD TUSEJO

*Guide to the Ratings:* ★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

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**Circle 376 on reader service card.**

# CD Notebooks Get Better—But Bigger

Pull out all the stops when upgrading a multimedia portable and the result is, well, big and heavy. But it's also teeming with power and features that were unthinkable only 18 months ago.

So it is with Panasonic's CF-41 Mark III and Zenith Data Systems' Z-Note GT. Both machines bring faster performance, bigger screens, and an array of new technologies to their already highly capable presentation platforms. But schlepping one of these beasts around won't exactly lighten your step—or mood.

**Get It Right** The first two iterations of Panasonic's Mark III resolutely failed to impress us. Although it was one of the first notebooks to integrate a full-size CD-ROM drive, the implementation was kludgy: The drive was nonremovable and you had to pop up the keyboard to switch discs. Also, the machine was underpowered and oversized.

With the Mark III, you get to choose your Pentium CPU—up to 120MHz augmented with a 256K L2 cache. No complaints there. On the high-end model, 16MB of RAM is standard, along with a 1.35GB hard drive. So far, so good. The CD-ROM drive is a quad-speed model—although it's still not removable. The active-matrix display has been bumped up to 12.1 inches, rendering resolutions of up to 800 by 600 pixels. It's gorgeous.

In other words, Panasonic put together all the right pieces for a first-rate presentation platform. Besides the standard audio jacks, there are dual speakers. Their reproduction quality is surprisingly good, though we wish they could belt out a little more volume. An MPEG-2 module is optional, and an external clip-on microphone comes with the machine.

But the Mark III still needs work in usability. There's no wrist rest, which makes the center-mounted trackball difficult to use. The floppy drive swaps out with a second nickel-metal hydride battery, but lithium-ion technology is long overdue. There's no infrared port. An LED panel for system status is much preferred over the Mark III's LCD panel. The AC adapter is oversize and uses a three-prong plug. And the Mark III's 8.8 pounds—well, you get the picture. It lacks the refinement of other multimedia portables.

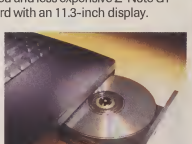
Zenith took a slightly less ambitious yet more successful route with its Z-Note GT. Available with either a 75MHz or a 90MHz Pentium and 256K L2 cache, the Z-Note comes with 8MB of RAM and either an 810MB or a 1.36GB hard drive. The standard display is 11.3 inches (with a 12.1-inch option)—either active-matrix or dual-scan passive matrix—and is capable of resolutions of up to 800 by 600.

**Shrewd Design** The Z-Note's removable CD-ROM drive is double-speed, although there's a quad-speed option. It swaps out with a floppy drive, a second hard drive, or a second battery. Like the Mark III, the Z-Note offers an MPEG option—just the way we like it.

The Z-Note gets high marks for usability. Dual stereo speakers sit on each side of an expansive wrist rest, but they sound terrible. Large, concave mouse buttons sit in the center, and there's a pointing-stick device. The keyboard is well-designed with two Windows 95 buttons on either side, although keyboard response could be better.

There's an LED system-status display, integrated microphone, and infrared port. You can also upgrade your own memory and lock down expansion bays with bona fide screws. What the Z-Note GT lacks in power, it makes up for in refinement and shrewd design. MARTY JEROME

**Visible Advantage:** The Mark III's 12.1-inch active-matrix display (right) is great for traveling presentations. Zenith's more refined and less expensive Z-Note GT (left) comes standard with an 11.3-inch display.



**Swap It:** Unlike Panasonic's model, Zenith's Z-Note has a removable double-speed CD-ROM drive that can be upgraded to a quad-speed.

## FILEBOX

### CF-41 Mark III

★★★

**Verdict: Sublime performance, but the design is unrefined and oversized.**

**Pros:** Big 12.1-inch, high-resolution screen and fast 120MHz Pentium processor.

**Cons:** It's big and heavy at 8.8 pounds—and pricey too.

$6,800 est. street price
Panasonic
(800) 742-8086
*Reader Service No. 676*

### Z-Note GT

★★★★

**Verdict: Packed with bells and whistles—if you're willing to shell out some extra change.**

**Pros:** The CD-ROM swaps out for a battery, floppy drive, or hard drive.

**Cons:** The price is deceiving—you have to spend another $1,000 to trick it out.

$4,800 est. street price
Zenith Data Systems
(800) 533-0331
*Reader Service No. 677*

PHOTOGRAPHS BY ARNOLD TROSE JR.

*Guide to the Ratings:* ★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

Has lived in New York all his life.
Never visited the Empire State Building.

# Quick and Easy Color Scanning

SNEAK PREVIEW

You want dazzling color and speed in a flatbed scanner, but you don't want to drop $1,000 for it, right? That doesn't make you a tightwad. Just realistic. Hewlett-Packard's ScanJet 4p fits the bill, giving you accurate color and text scanning for about $500.

The 24-bit color (8-bit grayscale) flatbed scanner offers 300-dpi optical resolution (1200-dpi software enhanced). That's not enough for graphics professionals, but it's adequate for scanning images and text for newsletters, flyers, and reports. The ScanJet does an outstanding job of preserving the color of scanned images.

**Office Workhorse** The ScanJet 4p includes an array of software for putting your scanner to work. Image scans are handled by HP's PictureScan 2.0 utility, which lets you edit the images and place them directly into your word processor and other documents. For more advanced image manipulation, HP includes Corel's PhotoPaint Select 5.0 for editing, cropping, and enhancing scanned images. It has all the standard tools to help you mark up an image or apply special effects.

You also get Visioneer's PaperPort 3.0 software for tackling the mountains of paper on your desk. Scan paper pages in, and the software lets you organize and retrieve documents, store them electronically, or distribute them via fax or e-mail. The result is highly effective document management. The PaperPort software also comes with a free viewer so you can share documents with others even if they don't have the PaperPort software installed on their system.

**Scan It and Save It:** Hewlett-Packard's much-awaited ScanJet 4p color scanner is a fast, accurate, and affordable way to bring high-quality images to newsletters, reports, and other documents. The ScanJet 4p also doubles as a copier and personal document scanner, thanks to the included software.

**Precision Color:** Like other scanners in its price range, HP's ScanJet 4p misses fine details in some images, but excels at keeping the true colors of originals while maintaining speedy performance.

For converting scanned documents into editable text, the ScanJet 4p includes Caere's OmniPage Lite OCR package, which integrates with the PaperPort software. In our tests, scans were very accurate, and the results were better than what you get with a dedicated document scanner such as Visioneer's PaperPort Vx or Logitech's ScanMan PowerPage. But because the ScanJet 4p is a flatbed model, scanning documents is a slower process than with a sheet-fed document scanner.

With the ScanJet's copy utility, you don't have to walk down the hall to the copier. Make multiple copies, set exposure, and reduce or enlarge originals—then send the results to your black-and-white or color printer.

**Speed Reader** Scan speeds are surprisingly quick for a flatbed scanner. Single full-resolution scans average around 22 seconds. For simple document scanning, however, the ScanJet is much faster. There's an optional 50-page automatic document feeder ($499) for batch scanning—key for document-management jobs.

The ScanJet also gets high marks for usability. Using Windows 95's Add New Hardware Wizard, installation was painless and conflict-free, and the included SCSI card is clearly labeled for easy identification. While the ScanJet 4p isn't as compact or lightweight as other scanners, such as Canon's popular IX-4025, it fits onto most desktop workspaces quite nicely.

If you're looking for fast, quality color scanning and document management that won't break the bank, HP's ScanJet 4p is an excellent choice.

LIESL LA GRANGE NOBLE

## FILEBOX

**ScanJet 4p**

★★★★

**Verdict: Quality color scanning and great software for an outstanding price.**

**Pros:** The included software covers everything from document management to image editing.

**Cons:** The ScanJet 4p scans photographs and other images nicely, but it doesn't always pick up fine details.

**Competition:** Envision's $699 880DS and Canon's $599 IX-4025 offer comparable image quality, but the ScanJet 4p has a superior software bundle and costs considerably less. The IX-4025 is more compact than the ScanJet.

**Features as Tested:** 300-dpi optical resolution, SCSI card and cable, Corel's PhotoPaint Select 5.0, Caere's OmniPage Lite, HP's ScanJet copy utility, HP's PictureScan 2.0, and Visioneer's PaperPort 3.0 software.

$499 est. street price
Hewlett-Packard
(800) 722-6538, (415) 857-1501
*Reader Service No. 678*

PHOTOGRAPH BY ARNOLD TROSLIO

*Guide to the Ratings:* ★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

Was born and raised in Paris.
Has never been to the top of the Eiffel Tower.

# Flat Monitors in the Forecast

SNEAK PREVIEW

The day we all own a trim, flat-panel monitor that hangs on the wall may not be so far off: NEC now offers two new high-resolution active-matrix LCD displays in its flagship MultiSync line of monitors. These displays are less than 7 inches deep and take up a fraction of the space conventional CRT monitors do. And because they're LCDs, they're brighter and sharper than conventional monitors, produce no electromagnetic emissions, generate no eye-fatiguing flicker, and consume less than half the power of regular CRTs. The downside? You'll pay $3,999 to $5,999 for the privilege.

The premiere MultiSync LCD300 has a full 13-inch display area (as large as what you'll find on many 15-inch CRTs) and supports resolutions from 640 by 480 pixels to the ultrafine 1,280 by 1,024. The MultiSync LCD200 has a smaller 12-inch active-display area and tops out at 1,024 by 768 pixels. Unlike other flat-panel displays that require a separate graphics adapter tuned for an LCD panel, both panels work with any video card that supports these resolutions.

Both monitors are graced with sleek, sub-8.5 pound modern designs. Discreet knobs on the bottom front-panel of the display adjust image size, position, and brightness. The detachable base on each also slides off so you can hang the display on the wall.

**Razor-Sharp** A 12- or 13-inch display might seem confining next to the spacious 17- or 21-inch CRT on your desk, but the active-matrix images on both are razor-sharp, and the colors are rich and vibrant. The tight .20mm dot pitch on the MultiSync LCD300, and .24mm on the MultiSync LCD200 (compared with the .26mm or higher dot pitches of most conventional monitors) let you discern hairline details and read tiny 4-point type onscreen. And unlike many passive-matrix screens on notebooks, active-matrix panels have a wide viewing angle so you don't have to be directly in front of them to see images or text onscreen.

There are other advantages to LCD technology as well. Active-matrix LCDs function as one large integrated circuit with hundreds of thousands of separate transistors, each one always illuminated. This means LCDs not only produce brighter images, but also eliminate the eye-fatiguing flicker associated with CRTs. Brightness notwithstanding, LCDs still consume less power than traditional monitors do—less than half of what a 15-inch monitor dissipates.

**Sticker Shock** These futuristic desktop displays don't come cheap. The 12-inch MultiSync LCD200 sells for $3,999, while the 13-inch MultiSync LCD300 will set you back a breathtaking $5,999. If that seems like an astonishing amount to spend on a monitor, consider that a comparable display would have cost $14,000 only a few months ago.

Even at these drastically reduced prices, however, flat-panel technology isn't likely to find a home on most desktops in the near term. But the dramatic advances in desktop LCD technology certainly make one thing clear: In the long run, the future of monitors is flat. WENDY TAYLOR

**Glimpse of the Future:** NEC's new 13-inch active-matrix MultiSync LCD300 is less than 7 inches deep, produces razor-sharp images at resolutions of up to 1,280 by 1,024 pixels, and consumes less electricity than conventional monitors. So why don't we all have one? It costs $5,999—without the PC.

## FILEBOX

**MultiSync LCD300**

★★★★

**Verdict:** Brings high-resolution, flat-panel displays to the desktop—for a price.

**Pros:** LCD technology is brighter and crisper than that of traditional CRTs, doesn't emit potentially harmful emissions, and doesn't produce eye-fatiguing flicker.

**Cons:** Next to a 17-inch display, a 13-inch seems mighty small.

**Competition:** None. NEC makes the only high-resolution LCD panels for the desktop.

**Features as Tested:** The active-matrix MultiSync LCD300 supports resolutions of up to 1,280 by 1,024 pixels, and has a 13-inch viewing area and a .20mm dot pitch. The active-matrix MultiSync LCD200 supports resolutions of up to 1,024 by 768 pixels, and has a 12-inch viewing area and a .24mm dot pitch.

$5,999 est. street price for the MultiSync LCD300; $3,999 for the MultiSync LCD200
NEC Technologies
(800) 632-4636, (508) 264-8000
*Reader Service No. 679*

*Guide to the Ratings:* ★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

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# Snapshots to Your Hard Drive

Is film dead? Not yet, but even the film giant Kodak isn't hedging its bets. Kodak's newest point-and-shoot DC50 zoom camera lets you store images on removable credit-card–size memory cards. Once the images are stored, you can download them to your hard drive for editing and printing.

Like Kodak's original DC40 digital camera, the DC50 saves its 24-bit color images at a resolution of 756 by 504 pixels. The camera includes 1MB of internal flash memory that holds between 7 and 22 images, depending on the level of compression you choose.

But the real news is the DC50's ability to store images on removable flash-memory cards. You can purchase 5MB re-recordable cards for $200 to $300 that hold up to 90 images. Other digital cameras rely only on their internal storage space and hold just a few dozen images. To "develop" photos, just pop the memory card out of the camera and feed it into any standard PC Card slot. You can also download the images to a PC over a serial cable.

While the DC50 produces better-than-average images for a digital camera, it won't replace standard film cameras any time soon. But for quick-and-dirty digital snapshots, the DC50 zoom camera will make you smile. JULIE McCULLOUGH

**Smile for the Computer:** Kodak's DC50 zoom camera stores up to 90 high-resolution digital images on standard removable flash-memory cards.

**FILEBOX**

**DC50 Zoom Camera**

★★★★

**Verdict:** The quickest way to point and shoot.

**Pros:** The camera's removable cards store up to 90 images.

**Cons:** It still can't beat the speed or quality of a Polaroid.

**Features as Tested:** 756 by 504 resolution, 1MB internal memory, 5MB memory card.

$979 est. street price
Eastman Kodak
(800) 235-6325
*Reader Service No. 680*

## Umax Maxmedia CD-IS601 vs. Toshiba XM-3701

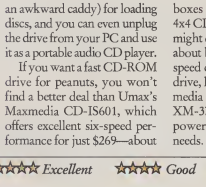
# Six-Speed Drives Cut the CD Wait

Is your CD-ROM drive slowing you down? If so, two new CD-ROM drives can cut your waiting time: Umax Technologies' six-speed Maxmedia CD-IS601 internal drive, and Toshiba's XM-3701 external 6.7-speed SCSI drive.

Which one should you get? If you crave top performance and handle large graphics files or databases, Toshiba's $415 (list) XM-3701 will deliver noticeable improvements. In our tests, it proved to be a true 6.7-speed drive with throughput of 1,020Kbps and a respectable 143ms access time, compared with the average quad-speed's throughput of 600Kbps and 180ms access time. The sleek design has a traylike mechanism (instead of an awkward caddy) for loading discs, and you can even unplug the drive from your PC and use it as a portable audio CD player.

If you want a fast CD-ROM drive for peanuts, you won't find a better deal than Umax's Maxmedia CD-IS601, which offers excellent six-speed performance for just $269—about half the price of competing six-speed drives on the market. Also, Umax has taken audio CD controls one step further by adding four control buttons (play, eject, next, and previous), which are accessible from the front of the unit.

New, inexpensive, quad-speed jukeboxes like NEC's MultiSpin 4x4 CD-ROM Changer ($279) might cause you to think twice about buying a single-disc six-speed drive. If you want a fast drive, however, both the Maxmedia CD-IS601 and Toshiba XM-3701 provide enough power for most multimedia needs. JAMES OLIVER CURY



**Spinning a Six-Speed:** Toshiba's XM-3701 delivers superfast 6.7-speed CD-ROM performance.

**FILEBOX**

**Maxmedia CD-IS601**

★★★★

**Verdict:** The best value you can get for an internal six-speed CD-ROM drive.

$269 est. street price
Umax Technologies
(800) 562-0311
(510) 651-4000
*Reader Service No. 681*

**Toshiba XM-3701**

★★★★

**Verdict:** Superfast 6.7-speed external CD-ROM drive—and it doubles as a portable audio player.

$415 list price
Toshiba America
(714) 457-0777
*Reader Service No. 682*

PHOTOGRAPHS BY ARNOLD TOSKEJO

*Guide to the Ratings:* ★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

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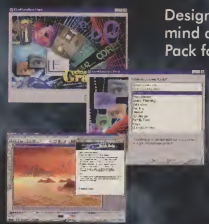

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**Circle 233 on reader service card.**

New! HARDWARE: Diamond Edge 3D

# Welcome to the Third Level

If you crave 3-D graphics so realistic that you can touch your monitor and almost feel the textures onscreen, Diamond's Edge 3D graphics board will take you there. It's the first graphics accelerator to add wavetable audio, full-motion video acceleration, and digital game ports.

Based on nVidia's 3-D chip set, the Edge 3D is Plug and Play and Windows 95–ready. In fact, it ships with only Windows 95 drivers. The Edge 3D accelerates digital video and MPEG, and can also serve as your main sound card. Installation was straightforward, and performance was excellent at 800 by 600 pixels with 65,530 colors—and even better at 1,024 by 768 pixels with 256 colors.

**Another Dimension:** Diamond's Edge 3D board adds 3-D graphics, video acceleration, audio, and wavetable MIDI synthesis to games.

Many people will want Edge 3D just to play the 3-D games it comes with: Sega's Virtual-Fighter Remix and Papyrus's NASCAR Racing. Edge 3D includes ports for Sega's Saturn game-controller pads and joysticks. As expected, the board ran the games smoothly, though it did slow down somewhat when we turned on all the rendering features.

Edge 3D delivers the goods starting at $269, depending on the configuration. For fast Windows 95 performance and 3-D business graphics, however, you'll be better served by accelerators such as Matrox's MGA Millennium and forthcoming boards from Number Nine. DAVE SALVATOR

**FILEBOX**

**Edge 3D**

☆☆☆☆☆

**Verdict:** 3-D and video acceleration for gamers.

**Pros:** Onboard video acceleration and 16-bit sound.

**Cons:** There are faster Windows accelerators.

**System Requirements:** Windows 95, 486 CPU, PCI bus.

$269 (base) est. street price
Diamond Multimedia
(800) 468-5846, (408) 325-7000
*Reader Service No. 683*

## Diamond 8000 vs. Turtle Beach Kit

# New Life for Multimedia Upgrade Kits

Just when you think multimedia upgrade kits went the way of 5-inch floppy drives, Diamond Multimedia and Turtle Beach release two unusual bundles: Diamond's Multimedia Ultra Kit 8000 and Turtle Beach's 8x Multimedia Upgrade Kit. Unless you have a mute, multimedialess system, you probably don't need an entire kit. But the big-ticket items in these packages might raise some eyebrows: Both offer an eight-speed CD-ROM drive, as well as a sound-card, speakers, and CD-ROM titles.

Despite their eight-speed billings, the drives didn't fare as well in our performance tests as did some six-speed drives. For simple data throughput, the drives delivered eight-speed performance, churning out 1.17MB per second. But both drives draw heavily on the system CPU, and their access times were slow—often slower than those of six-speed drives.

**Crazy Eights:** Eight-speed kits from Diamond (left) and Turtle Beach are slower than some six-speed drives.

While these eight-speed drives are outstanding for copying and running data from a CD-ROM, they're sluggish at finding and accessing files, which makes working with CD-based databases a pain. And they require so much CPU power, you can't multitask very well.

Regardless, Diamond's Multimedia Ultra Kit 8000 is the better value of the two, offering a 16-bit audio card with wavetable sound (which the Turtle Beach bundle lacks) and a nice pair of Yamaha speakers.

If you're just looking for a fast and solid CD-ROM drive, however, both these upgrade kits are overkill. A basic six-speed CD-ROM drive is a much better deal. JACK LYON

**FILEBOX**

**Diamond 8000**

☆☆☆

**Verdict:** Not a bad bundle if you need all the pieces, but the eight-speed CD-ROM is slower than many six-speed drives.

$599 list price
Diamond Multimedia
(800) 468-5846, (408) 325-7000
*Reader Service No. 684*

**Turtle Beach Kit**

☆☆

**Verdict:** Less expensive than Diamond's bundle, but it has an inferior sound card and speakers.

$499 est. street price
Turtle Beach Systems
(800) 884-0190
(510) 624-6200
*Reader Service No. 685*

PHOTOGRAPHS BY ARNOLD TIOSEJO

*Guide to the Ratings:* ☆☆☆☆☆ *Excellent* ☆☆☆☆ *Good* ☆☆☆ *Acceptable* ☆☆ *Poor* ☆ *Unacceptable*

PC
Talk
With Kate & Jack

# PC Talk

## With Kate & Jack

**Kate:** Rise and shine sleepy heads! It's time to drag your sorry tails out of the sack and boot up your PCs. You're locked into PCQA's *"PC Talk with Kate and Jack."* Your *only* source for the latest computer industry news.

**Jack:** That's right! We're ready to dive headfirst into some heavy-duty PC talk. But first I want to let all you computer gurus out there in on our little secret.

**Kate:** *Jack!* You blabbermouth — I thought we were going to keep a lid on it until the news! Bob, you're the controller. Keep your ears peeled for loose lips today!

**Bob:** Sure thing, Kate!

**Jack:** *Sorry Kate* — you know I can't keep a secret. Here's the scoop — we're fired up this morning because we're starting a new product review segment. We'll kick it off at approximately 10 a.m. when Chuck the delivery guy arrives with the black-and-white cow-spotted boxes.

The P5-166 Professional system features 16MB EDO DRAM, 256K pipelined burst cache, 2GB hard drive, 8X CD-ROM drive and Microsoft® Office 95, Professional Edition for only $2,899.

**Kate:** OK, the cat's out of the bag! We're ready to talk speed! Meg from Maine, you're on!

**Meg:** ***Hey, Gateway 2000 created a real screamer when they took the fastest Pentium® processor on the market — the Intel 166MHz Pentium processor — and put it in their P5-166 Professional system.***

**Jack:** You've got that right. Gateway has a reputation for ultra-speedy PCs. In fact, the February 1996 *Windows Sources* cover tagged a Gateway 2000 166MHz Pentium processor-based system as "the fastest Win 95 PC ever."

**Meg:** *I believe it! We have a whole fleet of Gateway P5-166 Professional systems at my accounting firm. Our clientele has doubled in less than two months because we're cranking through spreadsheets and crunching numbers like crazy. In a nutshell, productivity has skyrocketed, and that means my business is more profitable.*

**Jack:** Where'd you get these mean machines, Meg?

**Meg:** *Gateway 2000. Only $2,899 a crack.*

**Jack:** How can Gateway offer such a powerful system at that low price?

**Meg:** ***It's simple, Jack. Gateway knows how to cost effectively configure their systems for optimal performance.*** *The combination of 16MB EDO performance DRAM and 256K pipelined burst cache in the Gateway P5-166 Professional system produces blazing speed that processes data by the truckload.*

**Jack:** Why does this particular combination of memory and cache pack such a punch?

**Meg:** ***Pipelined burst cache and EDO DRAM speed up data delivery to the PC's processor.*** *This reduces the bottleneck created when high-speed processors try to access data from slower conventional memory.*

**Jack:** Amazing. And don't most Gateway PCs come with 16MB EDO performance DRAM?

**Meg:** *Absolutely. They know running 32-bit software apps like those in MS Office 95 with 8MB DRAM would be like driving a Ferrari with the parking break on.*

**Kate:** Pop the clutch, Meg! Sydney from Seattle, you're on!

**Sydney:** *What's all this hubbub about needing 16MB of memory? I thought 8MB was plenty.*

**Kate:** Get with the program, Sydney! **With 16MB of memory instead of 8MB you get a 25- to 30-percent performance increase. Al from Atlanta, you're on!**

**Al:** *Hey guys!* ***Not only does Gateway 2000 build extra-fast PCs — they custom-build each system to your exact specifications.***

**Kate:** Excellent point, Al. Gateway knows that cookie-cutter PCs don't meet the unique computing needs of their customers.

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GATEWAY 2000

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**Kate:** Boy, everyone's on a Gateway kick this morning. We must be sending out Gateway vibes!

**Jack:** C'mon Kate — our listeners are smart, and they're up to speed on the PC industry. We have another caller. Lenny from Los Angeles, you're on the air!

**Lenny:** *Yeah, I'm looking for a computer for my family. I need Microsoft® Word to write about my travels through the Amazon. And my kids want a PC to play games and help them with their homework.*

**Kate:** There are a lot of excellent home PCs out there. I'd recommend the souped-up version of the 166MHz Intel Pentium® processor-based system we talked about earlier. You need a PC loaded with all the goodies you can find, including a 6X CD-ROM drive for ultimate multimedia performance. Don't even think about a 4X IDE CD-ROM drive in a desktop PC. And you need a large selection of all the latest software versions.

**Lenny:** *I just read about a computer like that in PC Magazine.* ***They named the Gateway P5-166XL multimedia system Editor's Choice in their February 20, 1996, issue.*** *I thought maybe it was just a lot of hype — but if you guys say that's what I need, I'm a believer! I have to call Gateway right now!*

**Kate:** Smart choice. *Whoa!* The lines are lighting up. Let's see what Tex from Austin has to say.

**Tex:** *Yeah, what's all this Gateway talk? Sounds to me like you're biased — big time!*

**Jack:** Biased? Get off that jive, Tex. Ever heard of the First Amendment? We're just providing a forum so our listeners can make a knowledgeable decision when they purchase a computer.

**Tex:** *Well ... I'm just playing devil's advocate.*

**Jack:** Whatever. Go saddle up your horse or something. Next. Cole from Chicago you're on!

**Cole:** *What was up with that yahoo?!* ***Doesn't he know that Gateway is one of the few PC companies that provides true "personal computers." Each system is built to order at no extra cost — in fact you have over 15 million configuration options!***

**Jack:** That's a boatload of options! Thanks for the math lesson!

**Kate:** We have a caller from America's heartland. Hal from Holstein, Iowa, you're on the air!

**Hal:** *Mega power, Kate! I've been calling your show for years. I can't believe I actually got through.*

**Kate:** Thanks Hal, what's on your mind?

**Hal:** *I just bought my first Family PC™ multimedia system from Gateway. I was intimidated at first, but my sales rep, J.T., was very helpful. He helped me custom configure a P5-120 Family PC multimedia system, and he even took the time to tell me about MPEG data compression technology.*

**Kate:** How about telling us what you know about MPEG?

**Hal:** *Sure — MPEG stands for Moving Picture Experts Group, and it gives me awesome full-screen, full-motion video. J.T. explained how the 2MB DRAM graphics accelerator combined with video scaler, produces extra smooth video playback for MPEG multimedia applications. And with 2MB DRAM instead of 1MB, I get a whopping 16.1 million colors and a performance boost.*

**Kate:** **Today's technology is way cooler than I ever dreamed it could be.** Happy computing in Holstein! Hey, that reminds me — where's the delivery guy?

**Jack:** No sign yet. Dick from Detroit, you're on!

**Dick:** *What are you — a Gateway pep squad? I've heard it takes forever to get through to their tech support.*

**Jack:** OK *Dick* — let's set the record straight. Gateway had a few growing pains awhile back, but last year they beefed up their service with Gateway Gold™ service and support. It features 24-hour-a-day toll-free technical support, seven days a week: free software technical support for all Gateway-provided operating systems and application software, plus much more.

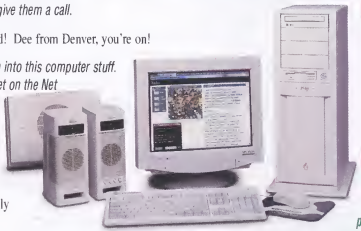
**Phil:** ***When I decided to go with the Intel Pentium Pro, I couldn't afford not to get the Gateway G6-200. It's specially configured for ultra-high performance.*** *The G6-200 flies through intense applications, and with the Matrox® 4MB WRAM graphics accelerator, I get fantastic graphics performance and 3-D hardware support with more colors.*

**Dick:** *You win. I'll give them a call.*

**Jack:** We're *so* good! Dee from Denver, you're on!

**Dee:** *I'm just getting into this computer stuff. I want a PC so I can get on the Net and the Web. Any recommendations?*

**Jack:** An ideal Internet computer for beginners is a Gateway P5-100 Family PC system with 8MB EDO Performance DRAM, a large hard drive, sound capabilities, a 6X CD-ROM drive and a 28.8 fax/modem.



The P5-166XL multimedia PC features 16MB EDO DRAM, 2GB hard drive, 16-bit sound card, speakers w/ subwoofer & 28.8 fax/modem for only $3,799.

**Dee:** *Do I really need a 28.8 fax/modem?*

**Jack:** Absolutely. You don't want to use yesterday's technology to cruise today's graphic-intensive Internet content.

**Dee:** *OK, you've convinced me, but I'm still a little nervous.*

**Jack:** Relax. **When you buy a Gateway multimedia PC you get a TelePath® 28.8 fax/modem along with the Gateway Info Highway CD.** It has an easy-to-use tutorial of included trial memberships to CompuServe,® Prodigy,® America Online® and Reuters Money Network, plus you get Global Network Navigator for Internet browsing. It's everything you need and more. Don't forget to check out Gateway's Web site at http://www.gw2k.com! Phil from Fresno, you're on!

**Phil:** ***Man, that Intel Pentium Pro processor pumps out the raw power I need for my graphics and design applications. Now my work is done by mid-afternoon, and I have time to hit the links.***

**Jack:** Now you're talkin'! Tell us more!

**Kate:** And remember the Gateway G6-150 is now only $3,199! Marge from Minneapolis is up next, and she's ready to talk MS Windows NT.™

**Marge:** *I haven't heard a lot on your show about Windows NT. It's the only way to go for business apps.*

**Kate:** How's that, Marge?

**Marge:** ***We use Windows NT 3.51 at my engineering firm, because it's a powerful 32-bit operating system that efficiently processes our data-intensive applications like those in MS Office 95, Professional Edition.***

**Kate:** Where do you get this ultra-efficient operating system?

**Marge:** *We get all our PCs from Gateway 2000. They preload Windows NT Workstation on our systems and configure the needed drivers for compatibility with Gateway hardware and software.*

**Kate:** Aren't all Gateway PCs loaded with MS Windows® 95?

**Marge:** *Not anymore. Customers have a choice of Windows NT or Windows 95 on their G6 systems, and Windows NT is available as an upgrade for only $99 on all Pentium processor-based PCs.*

**Kate:** Thanks for the Windows NT lesson, Marge! And don't forget Windows for Workgroups 3.11 is also available on Gateway Pentium processer-based desktop and portable systems. This is some prize stuff, Jack! Our listeners are educating the masses on how to find the very best values on leading computer technology.

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PC
Talk
With Kate & Jack
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**Jack:** I'm really pumped about this review segment. Bob, the controller, is even excited — he's keeping a sharp eye out for the delivery truck as we speak.

**Bob:** *Jack! Kate! Cow-spotted box alert! Delivery truck at 2 o'clock and closing!*

**Kate:** All right! Jack's headed for the door to greet Chuck.

**Jack:** Chuck! Buddy! How's my favorite delivery guy? Let me get my hands on those boxes. Whoa! That one is gigantic!

**Chuck:** *You've got that right!*

**Jack:** Thanks, Chuck! See ya tomorrow!

**Kate:** Let's open the big box.

**Jack:** Hey! It's a huge charcoal-colored monitor and a wirel keyboard and remote! Did they give us info on this stuff, Kate?

**Kate:** **No, this is a real mystery. The only clue is this Gateway 2000® Destination™ logo on the front of the monit**

**Jack:** According to this yardstick the monitor has a viewable area of 31 inches! Now my 21-inch monitor looks like a postca

**Kate:** Well, it could be something for presentations or a new tool for video conferencing. Or maybe it's a computing device that could replace the television.

**Jack:** You just might be onto something, Kate.

**Kate:** Gateway keeps rolling these new products off the line, don't they? It makes me wonder what else they have brewing u there in South Dakota. I have a feeling it's something spectacu

**Jack:** You know I have the same feeling, Kate. What's that, Bob? Ted Waitt, Chairman and CEO of Gateway 2000, is on lir three? Ted, you're on the air!

**Ted:** *Hey, how are you guys doin'?*

**Kate:** We're great. Say what's up with this Destination stuff?

**Ted:** *There's some really cool stuff happening in the PC indust right now, Kate.* ***The convergence of the PC, TV and consumer electronics is just around the corner, and all I can tell you is tl these products play a big part in all of it.***

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**Jack:** What's your destination in all this, Ted? Are you saying there's a new PC in Gateway's future?

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- MS Works 95
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- Modular 4X CD-ROM Drive
- Modular 3.5" Floppy Drive
- Integrated 16-Bit Sound with Stereo Speakers
- 1MB Video RAM
- Lithium Ion Battery & AC Pack
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**Matt:** *OK, I'm almost sold, but I have some pretty unique computing needs. Can I get this multimedia portable PC custom configured to my specifications?*

**Kate:** You bet! Gateway custom-builds all their PCs, so you get the configuration for your individual requirements.

**Matt:** *I'll give Gateway a call right now!*

**Kate:** We have another caller — Nancy from New York wants to tell us about her Gateway Solo multimedia PC.

**Nancy:** ***I just love my Gateway Solo S5-120XL portable PC!*** *I'm in sales for a Fortune 500 company, and I need both power and portability. I process tons of numbers and create complex spreadsheets with my Gateway Solo portable PC. Then I use MS PowerPoint® to plug this into into impressive presentations for executive bigwigs.*

**Jack:** What kind of configuration do you have?

**Nancy:** *My Gateway Solo portable PC is loaded with an Intel 120MHz Pentium® processor, 40MB RAM, a 1.2GB hard drive, 28.8 PCMCIA fax/modem, modular 4X CD-ROM drive, MS Office 95, Professional Edition and a 10.4-inch active matrix SVGA color display for only $5,299.* ***It's a lot of PC for the money.***

**Jack:** I bet it's great to have full multimedia capabilities.

**Nancy:** *You've got that right. The stereo sound adds a professional touch to my presentations, and when I do get a chance to relax I can pop in my favorite CD.*

**Kate:** Is this your primary PC?

**Nancy:** ***It sure is. The Gateway Solo PC has the power and performance of a desktop PC along with multimedia capabilities.***

**Kate:** All this talk is making me crazy to play with our new products. Let's take a station break. While we boot up our portable wonder and wire this Gateway Destination monitor to our desktop computer, *you* can call Gateway 2000 and order your own personal computer. **Back in 30.**

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## P5-166XL

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- 6X EIDE CD-ROM Drive
- 16-Bit Ensoniq® Wavetable Sound Ca
- Altec Lansing ACS-400 Speakers with ACS-250 Subwoofer
- TelePath 28.8 Fax/Modem with TAD*
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- 3.5" Diskette Drive
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- MS Office 95, Professional Edition**
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256K Pipelined Burst Cache
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6X EIDE CD-ROM Drive
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## P5-166

- Intel 166MHz Pentium Processor
- 16MB EDO Performance DRAM
- 256K Pipelined Burst Cache
- 2GB 10ms EIDE Hard Drive
- 2MB DRAM, 64-Bit PCI Graphics Accelerator
- 6X EIDE CD-ROM Drive
- 3.5" Diskette Drive
- Vivitron15..26dp Color Monitor (13.9" viewable)
- 7-Bay Mini Tower Case
- 104" Keyboard & MS Mouse 2.0
- MS Windows 95
- MS Office 95, Professional Edition*
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Generations
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**Kate:** Let's open the big box.

**Jack:** Hey! It's a huge charcoal-colored monitor and a wireless keyboard and remote! Did they give us info on this stuff, Kate?

**Kate:** **No, this is a real mystery. The only clue is this Gateway 2000® Destination™ logo on the front of the monitor.**

**Jack:** According to this yardstick the monitor has a viewable area of 31 inches! Now my 21-inch monitor looks like a postcard.

**Kate:** Well, it could be something for presentations or a new tool for video conferencing. Or maybe it's a computing device that could replace the television.

**Jack:** You just might be onto something, Kate..

**Kate:** Gateway keeps rolling these new products off the line, don't they? It makes me wonder what else they have brewing up there in South Dakota. I have a feeling it's something spectacular.

**Jack:** You know I have the same feeling, Kate. What's that, Bob? Ted Waitt, Chairman and CEO of Gateway 2000, is on line three? Ted, you're on the air!

**Ted:** *Hey, how are you guys doin'?*

**Kate:** We're great. Say what's up with this Destination stuff?

**Ted:** *There's some really cool stuff happening in the PC industry right now, Kate.* ***The convergence of the PC, TV and consumer electronics is just around the corner, and all I can tell you is that these products play a big part in all of it.***

**Jack:** What's your destination in all this, Ted? Are you saying there's a new PC in Gateway's future?

**Ted:** *We're always coming up with new stuff, Jack.* ***Let's just say there's a revolution on the horizon, and you can bet that Gateway will lead the way.*** *Well, it's been great, but I gotta get back to work. Great show!*

**Kate:** Wow! I can't believe Ted called us! Well that's enough hoopla for now. I bet the Gateway team put something awesome in our small box, too. Let's open it!

**Kate:** It's a performance-packed Gateway Solo™ S5-75XL multimedia portable PC. Hey, get a load of this invoice — it's only $2,999!

**Jack:** Unbelievable! That's an incredible price for a full-featured multimedia portable PC. Value like that is hard to come by in today's PC market, especially on a hot product like this. It's no wonder the December 28, 1995, *Chicago Sun Times* said, "The Gateway Solo is the best multimedia notebook on the market."

**Kate:** And, according to this press release, all Gateway Solo portable PCs now come standard with modular 4X CD-ROM drives and 10.4-inch SVGA color active-matrix screens.

**Jack:** Callers, what are your thoughts on the Gateway Solo portable PC? Matt from Montreal, go ahead!

The Gateway Solo S5-120XL portable PC features a 10.4" SVGA color display, 40MB RAM, 1.2GB hard drive, modular 4X CD-ROM drive, 28.8 PCMCIA fax/modem,16-bit sound, speakers and MS Office 95 for only $5,299.

**Matt:** *I have to admit that's a tempting price tag, but there has to a be a catch. I bet it has a dinky hard drive, almost no memory and low-rent software.*

**Kate:** You've got it all wrong, pal. The Gateway Solo S5-75XL is outfitted with a roomy 540MB hard drive, 8MB RAM, 256K L2 pipelined burst cache, Microsoft® Works 95 and Windows® 95.

intel inside
pentium PROCESSOR

## Multimedia Systems

### P5-100 FAMILY PC™

- Intel® 100MHz Pentium® Processor
- 8MB EDO Performance DRAM
- 1.2GB 9ms EIDE Hard Drive
- 1MB DRAM, 64-Bit PCI Graphics Accelerator with MPEG Video Scaler
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- 16-Bit Gateway Sound Card
- Altec™ Lansing ACS-40 Speakers
- TelePath® 28.8 Fax/Modem with TAD*
- Gateway Information Highway CD
- 3.5" Diskette Drive
- CrystalScan® 15 .28dp Color Monitor (13.9" viewable)
- 7-Bay Desktop Case
- 104" Keyboard & MS Mouse 2.0
- Microsoft® Windows® 95
- Generations II Software Collection
- Gateway Gold™ Service & Support

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### P5-120 FAMILY PC

- Intel 120MHz Pentium Processor
- 16MB EDO Performance DRAM
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- 6X EIDE CD-ROM Drive
- 16-Bit Gateway Sound Card
- Altec Lansing ACS-40 Speakers
- TelePath 28.8 Fax/Modem with TAD*
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- TelePath 28.8 Fax/Modem with TAD*
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- 6X EIDE CD-ROM Drive
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- 12-Bay Tower Case
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- MS Office 95, Professional Edition**
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### G6-200

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- 4X SCSI-2 CD-ROM Drive
- 3.5" Diskette Drive
- Vivitron21 Color Monitor (19.9" viewable)
- 12-Bay Tower Case
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## Microsoft Internet Explorer 2.0

# Microsoft Narrows Netscape's Lead

If you want a Web browser that does it all, the one that comes closest is Netscape's Navigator. But Microsoft's Internet Explorer 2.0 is coming on strong. Give it a try—especially if you're frustrated by Navigator's Bookmarks.

Although Explorer 1.0 shipped as part of Microsoft's $40 Plus Pack for Windows 95, you can download a free copy of Internet Explorer 2.0 from Microsoft's Web site. In fact, you can't get Explorer 2.0 any other way right now.

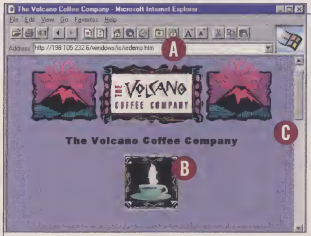
**So Why Switch?** The best reason to try Internet Explorer is its Favorites bookmarking system, which relies on Windows 95 shortcuts to save URLs as icons in folders. These folders are available on the Favorites menu, which looks a lot like Netscape's Bookmarks. You can also open Favorites as a folder window in Windows 95 to modify and organize your URL shortcuts.

The single biggest enhancement to Internet Explorer 2.0 is its excellent support for Navigator tables. No other non-Navigator browser does as good a job with tables. Internet Explorer 2.0 also supports background WAV and MIDI sounds, scrolling text marquees, simple animations, and inline video, as well as 3-D VRML using Microsoft's freely distributed ActiveVRML (see "Browsing in the Third Dimension," page 82).

**Imperfect E-mail** Internet Explorer 2.0 supports Usenet newsgroups and adds a level of security roughly comparable to Navigator's. Also new is Internet e-mail support, but it only works with Windows 95's sometimes-awkward Exchange e-mail module. We'd prefer a simple mailbox system like Navigator's, or at least a facility for hooking up a third-party e-mail program, such as Qualcomm's 32-bit Eudora Pro 2.2.

Performance was one of the biggest knocks on the first version of Internet Explorer. The second version is faster, but it's still no barn burner. Internet Explorer has a unique way of opening pages: It displays all the text first, inserts placeholders for graphics, and then updates the graphics. Based on simple time trials, Internet Explorer takes longer than Navigator to load a page, but with Internet Explorer you can start reading text almost immediately. Internet Explorer 2.0 doesn't yet support Netscape's Frames, although it will in the next release, Explorer 3.0.

The future of Internet Explorer is pretty rosy. In fact, Microsoft has announced plans to integrate the browser directly into Windows, which should make Internet Explorer even easier to use. That alone may be reason enough for many people to switch. If you're a Navigator user looking for a change, try Internet Explorer 2.0. SCOT FINNIE

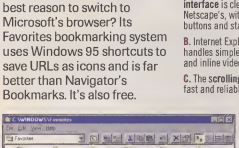



**Navigator Alternative:** The best reason to switch to Microsoft's browser? Its Favorites bookmarking system uses Windows 95 shortcuts to save URLs as icons and is far better than Navigator's Bookmarks. It's also free.

**A.** Internet Explorer's **interface** is cleaner than Netscape's, with fewer buttons and status bars.

**B.** Internet Explorer also handles simple **animations** and inline video.

**C.** The **scrolling ticker** is fast and reliable.




**Better Bookmarks:** Open Internet Explorer's bookmarks as a folder window to organize or delete links to sites.

**FILEBOX**

**Internet Explorer 2.0**

★★★

**Verdict: If it weren't for Netscape's Navigator, this would be the browser to beat.**

**Pros:** It offers a superb bookmarking system and support for OLE, both of which are great for Windows 95 users.

**Cons:** It can't touch Navigator's performance, e-mail interface, or third-party–product compatibility.

**System Requirements:** Windows 95, 8MB of RAM, 1MB to 3MB of hard disk space, and a modem for dial-up connections.

**Features:** Support for OLE, Favorites bookmarks, Exchange, and tables.

**Free Download:** You can get a free copy of Microsoft's Internet Explorer 2.0 from our Web site (www.pccomputing.com). Internet Explorer 2.0 is not currently sold in stores.

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*Guide to the Ratings:* ★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

# Do-It-Yourself Database Power

Almost every database program slaps the term *easy-to-use* somewhere on its packaging. But in reality, you have to know C++ and structured query language (SQL) in your sleep. Claris's FileMaker Pro 3.0 is one of the few end-user databases that actually lives up to its claims of simplicity. Add the latest version's long-awaited relational support, and you have a powerful way to create databases in a fully graphical page-layout environment. Although it still lacks a few important elements for building simple databases, like support for SQL, FileMaker Pro is an ideal sort-and-retrieve tool.

**Look It Up** While previous versions of FileMaker Pro included Lookup tools for locating various elements in records, there was no automated way to combine various search elements to create new records. In version 3.0, FileMaker Pro is fully relational; linking data is as simple as point and click. Relational features give FileMaker Pro more power and eliminate redundant data. There's also a new Portal feature that lets you view matching data from multiple records. For example, a Realtor could use the Portal to display a list of houses that fall within a certain price range. Version 3.0 also finally replaces the 32MB file-size limit with a more respectable 2GB limit.

Creating databases from scratch in FileMaker Pro isn't much different than with other end-user packages. But thanks to its excellent page-layout tools, FileMaker Pro does it much faster. Its draw-like functions let you easily create and control graphics, plus add text and pictures. Unlike in other end-user databases, almost all of the database creation process in FileMaker Pro is done graphically. By drawing with a cross hair tool, you just specify the size of a field and determine where in the database layout it should reside.

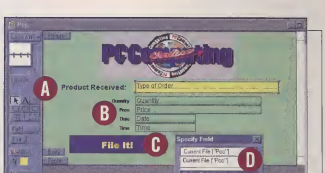
To write scripts, simply choose commands off a list. This ensures that you're using the correct syntax and that the commands are spelled correctly. Moreover, you can test the scripts immediately.

This version of FileMaker Pro comes with a library of new script commands—including one that automatically dials a phone or modem. Another enhancement this version provides is OLE support, so you can link or embed objects into fields and layouts.

The program is network-ready, so workgroups can immediately share files. FileMaker Pro's built-in password protection limits access privileges. Additionally, a cross-platform environment lets you immediately share data between PC and Macintosh systems.

**Database Race** When you're shopping around for a database, ask yourself what's more important—simplicity or power? While FileMaker Pro has enough muscle for small-scale databases, it isn't as comprehensive as Microsoft's Access 95, Borland's Paradox 7.0, or Lotus's Approach 96. FileMaker Pro sorely lacks charting functions and server-based SQL support. And because FileMaker Pro isn't part of an office suite, there's no integration with other applications, particularly spreadsheets.

Depending on your needs, you may outgrow FileMaker Pro quickly. Its lack of SQL support prohibits you from accessing and sorting through your data in an open-ended manner. But for those who need highly intricate sort-and-retrieve tools, FileMaker Pro is a simple and inexpensive solution for building databases. **WAYNE KAWAMOTO**



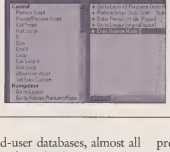

**Relational Revelations:** FileMaker Pro 3.0 is an ideal solution for creating simple, but somewhat limited, database applications. This version has the same easy-to-use graphical tools of previous releases, and adds relational features, enhanced sort-and-find tools, and OLE support.

**A.** Layout tools let you **graphically arrange** fields.

**B.** It's easy to **edit and modify** text fields.

**C. Create buttons** to execute scripts.

**D.** Relational links **sort files** across multiple applications.




**In the Script:** Creating scripts in FileMaker Pro 3.0 is easy: Just pick the command you need from FileMaker Pro's list of command options.

## FILEBOX

**FileMaker Pro 3.0**

★★★★

**Verdict: The easiest way to create relational databases.**

**Pros:** It mimics the tools found in many page-layout programs to make creating and designing custom databases simple.

**Cons:** Because it doesn't support SQL, it's a poor choice for creating sophisticated database applications.

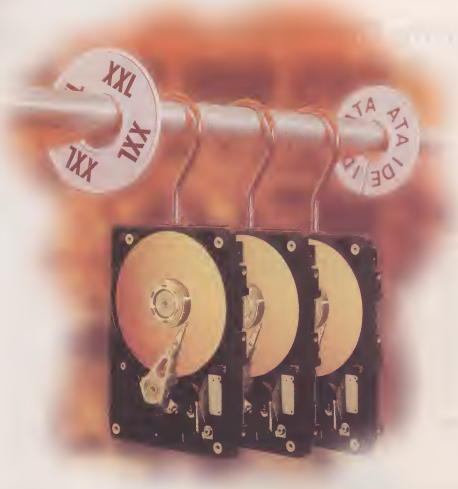
**Competition:** Microsoft's Access 95 and Borland's Paradox 7.0 are comprehensive products geared toward more experienced developers. Lotus's Approach is similar in look and feel, and supports SQL, but FileMaker Pro is a little easier to use with its page layout interface, and checklist scripting.

**System Requirements:** Windows 95 or Windows NT, 486 CPU, 8MB of RAM, 20MB of hard disk space.

$199 est. street price
Claris Corp.
(800) 544-8554
(408) 727-8227
*Reader Service No. 690*

*Guide to the Ratings:* ★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

The 2GB Medalist

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**Circle 269 on reader service card.**

# Browsing in the Third Dimension

SNEAK PREVIEW

With significant gains in Virtual Reality Markup Language (VRML) technology, static, two-dimensional Web pages are going the way of silent films.

Three interesting VRML browsers include Microsoft's ActiveVRML, Sony Pictures Imageworks' CyberPassage, and Paper Software's WebFX. You can download all three for free, so try them all if you can. Unfortunately, ActiveVRML works only with Microsoft's Internet Explorer Web browser (see "Microsoft Narrows Netscape's Lead," page 79), and CyberPassage requires either Windows 95 or Windows NT. WebFX is your best all-around bet: It supports Netscape's Navigator under Windows 3.1, Windows 95, or Windows NT; it also works within Internet Explorer 2.0.

**3-D Exploring** ActiveVRML is the best browser for Internet Explorer fans who are comfortable navigating 3-D worlds with Explorer's History and Favorites tools. These same 3-D worlds can be embedded within HTML documents. For performance boosts, the texture and inline elements of VRML are downloaded in the background. Like the other two browsers, ActiveVRML supports hyperlinks.

Paper Software, one of VRML's forefathers, released an early version of WebFX almost a year ago. As VRML gained momentum, WebFX gained power and features.

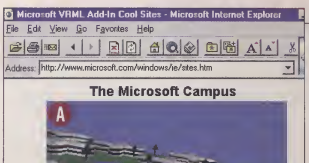
WebFX works with Netscape's Navigator running under Windows 3.1, Windows 95, or Windows NT. It's also the only VRML viewer that integrates with Microsoft's browser, Internet Explorer. This integration makes browsing the Internet similar to browsing the contents of your hard drive or system.

Netscape Navigator fans will benefit most from WebFX. It plugs seamlessly into Navigator 2.0, leveraging Navigator's history, hotlist, security, and unique client-side image-caching features. It also supports Creative Labs' 3D Blaster 3-D acceleration hardware as well as IRC-based chatting through 3-D avatars.

Sony Pictures Imageworks' CyberPassage, which debuted in Japan several months before arriving in the United States, is basic VRML surfing with a twist: a distinctive Sony technology called e-VRML.

**Special Effects** E-VRML includes support for high-quality audio and enhanced animation, and it lets you manipulate objects individually on the same page. Because the success of e-VRML technology has yet to be determined, CyberPassage smartly supports the same VRML 1.0 conventions that most other browsers do.

Overall, we like the power as well as the broad platform and browser support of WebFX. But because all three browsers are free to download, do your own 3-D wandering and choose your favorite. Assuming you have the necessary bandwidth, you may never have to look at flat, 2-D pages again. For live links to all three of these VRML browsers, check out PC Computing Online (www.pccomputing.com). RICH SCHWERIN




**Next Level:** Still using a flat, 2-D browser? Grab a free VRML browser and fly through virtual worlds. Microsoft's ActiveVRML is one such browser, but it works only with Microsoft's Internet Explorer.

**A. 3-D VRML worlds** can be embedded within standard HTML pages.

**B.** Four navigational buttons **control your VRML movement.**

**C.** Feeling dizzy? The **calibration button** resets your world.

**3-D Passage:** Sony Pictures Imageworks' browser, CyberPassage, lets you surf through 3-D worlds. It also adds audio and animation.

## FILEBOX

### ActiveVRML

★★★★

**Verdict: A great solution for basic 3-D surfing—provided you use Microsoft's Internet Explorer 2.0.**

Free
Microsoft Corp.
http://www.msn.com/ie/ie.htm
(800) 426-9400, (206) 882-8080
*Reader Service No. 691*

### CyberPassage

★★★★

**Verdict: A great VRML browser with interesting new audio features.**

Free
Sony Pictures Imageworks
http://sonypic.com
(800) 222-7669
*Reader Service No. 692*

### WebFX

★★★★

**Verdict: A complete VRML solution tailored to work with Netscape's Navigator under any Windows platform.**

Free
Paper Software
http://www.paperinc.com
(914) 679-2440
*Reader Service No. 693*

**Free Stuff:** Get free copies of these browsers at our Web site (www.pccomputing.com).

*Guide to the Ratings:* ★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

# Our engineers blew out a few pocket protectors on this one.

*Sam "Guru" Miller,*
*Manager, New Product Development*

*To say that ViewSonic's new PT810 SonicTron™ 21" (19.5" viewable) monitor has a great picture hardly does it justice. Actually, it's better than great. Even the most particular CAD/CAM/CAE users and desktop publishers are staring in wide-eyed amazement.*

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**Circle 171 on reader service card.**

# Inimitable Image Effects

SNEAK PREVIEW

When you simply must turn a tennis ball into 30 permutations of a psychedelic 3-D octagon, Kai's Power Tools (KPT) 3 is for you. But you have to endure a stubbornly cryptic interface.

An irreverent add-on for Adobe's Photoshop and other illustration applications that support Adobe's plug-in architecture, KPT has developed a fanatical following. Even though Photoshop ships with filters for creating standard effects, experienced artists quickly feel limited by its basic collection of features. KPT gives you more tools, more speed, and greater control over effects, as well as larger real-time preview windows.

KPT's Lens f/x lets you control smudge, noise, fine edges, and Gaussian-blur effects by moving a flexible lens tool over your images. If you want to play with spheres—perhaps as buttons for a Web page—the Spheroid Designer offers 3-D distortions.

**Something Wild:** Create great photo effects with Kai's Power Tools 3's Lens f/x feature—if you can get past KPT's cryptic interface.

But the program functions like nothing you've ever used before. KPT helps you generate thousands of new, visually compelling images, but you have to randomly tug and pull at bars and buttons to see what they do.

KPT will certainly help graphic artists and Web-page designers generate unique effects in less time than they're used to spending. But unless you have experience with KPT or you're willing to spend hours experimenting, you'll flail around the interface, uncontrollably spewing out odd effects and wondering why none of the buttons are labeled. JAMES OLIVER CURY

**FILEBOX**

**Kai's Power Tools 3**

★★★½

**Verdict: Amazing graphics effects, but you have to get past the interface first.**

**Pros:** Unlimited color and texture effects; larger and faster preview screens; 36 levels of undo.

**Cons:** Interface changes from feature to feature; no vector image effects.

**System Requirements:** Windows 3.1 or Windows 95, 486 CPU, 8MB of RAM, any image-editing application that supports the Adobe plug-in 32-bit architecture.

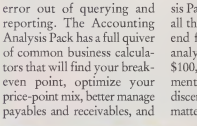
$129 est. street price
MetaTools
(805) 566-6200
*Reader Service No. 694*

## Microsoft Accounting Analysis Pack

# Critique Your Cash Flow

Should you hire another salesperson? How much money can you make by increasing sales of your high-price, low-margin products? Microsoft's Accounting Analysis Pack gives you the information you need to answer these questions by importing your accounting data into Excel for Windows 95, where you can perform common what-if analyses.

It's not a trivial endeavor. Big companies pay professionals a lot of money to generate analyses like these, but the Accounting Analysis Pack does it all for you. It has links to all the popular small-business accounting programs so you can easily import data. And predesigned formulas take the trial and error out of querying and reporting. The Accounting Analysis Pack has a full quiver of common business calculators that will find your break-even point, optimize your price-point mix, better manage payables and receivables, and reduce tax liability, among other tasks. Many what-if scenarios can be graphed, and all of them can be completely customized to suit your unique needs. Just pick from among the Import, What-If Analysis, or Report Wizards menus that Accounting Analysis adds to your Excel for Windows 95 menus.




**Fire or Hire?** Salesperson profitability is just one of many analyses you can do with Accounting Analysis Pack.

Accounting Analysis Pack wasn't designed to do all the tricks found in higher-end financial-forecasting and analysis packages. But for $100, it's an excellent investment that helps you focus a discerning eye on all your cash matters. MIKE HOGAN

**FILEBOX**

**Accounting Analysis Pack**

★★★★

**Verdict: Effective analysis of your business money matters.**

**Pros:** The Report Wizards make the process easy.

**Cons:** It works only with Excel for Windows 95.

**Competition:** Business Matters' Cashé has better financial forecasting, but it's expensive and designed for big businesses.

**System Requirements:** Windows 95, 486 CPU, 8MB of RAM, Excel for Windows 95.

$100 est. street price
Microsoft Corp.
(800) 426-9400, (206) 882-8080
*Reader Service No. 695*

*Guide to the Ratings:* ★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

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Circle 148 on reader service card.

COMPAQ

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As with all Compaq PCs, Deskpro is covered by our free 3-year limited warranty. For more information on our full line of Compaq desktop PCs, call us at 1-800-345-1518 or reach us on the Web at www.compaq.com. In Canada, we can be reached at 1-800-567-1616. ©1996 Compaq Computer Corporation. All rights reserved. Compaq and Deskpro registered U.S. Patent and Trademark Office. Some features available with Compaq Deskpro and independent software applications. Other features only available with Windows 95.

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**LAN Times**

"NetCruiser—best Internet front end."
**Online Access Magazine**

"NetCruiser is great for people who are intrigued by the Net but intimidated by the commands usually required for access."
**PC/Computing**

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## Microsoft Exchange Server 4.0

# Industrial-strength E-mail

**SNEAK PREVIEW**

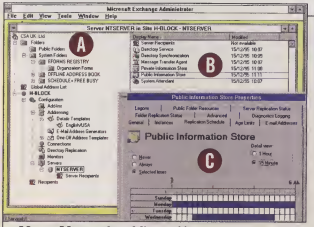
Microsoft's long-awaited Exchange Server 4.0 is finally available. Was it worth the wait? Absolutely. Exchange Server is a powerful e-mail platform that's easy to use and configure. While it doesn't top Lotus's Notes in distributed applications and database handling, Exchange Server is one of the best dedicated e-mail solutions available.

**Rich E-mail** At the heart of Exchange Server is its Message Store, a universal database that stores a variety of object types. In addition to traditional e-mail messages, the Message Store holds embedded OLE objects, disk files, and special Visual Basic miniprograms called Forms.

Forms let you customize the Exchange client environment. Using the Form Designer and the bundled version of Visual Basic for Applications, you can create custom miniapplications that make it easier to organize and store information. For example, one of the sample Forms that ships with the product is a simple contact-management application.

Another key feature of Exchange Server is replication, a process whereby various Exchange Servers within a network enterprise synchronize their respective Message Stores. But instead of replicating individual fields within files, as do competing products such as Lotus's Note 4, Exchange replicates forms and files only in their entirety.

Notes also has the upper hand in Rapid Application Development. Changes to Notes' databases are automatically replicated—source codes and all—to every Notes server. With Exchange, Forms can be replicated, but their source codes are left behind.

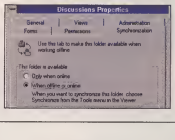



**Mega-Messaging:** Microsoft's Exchange Server 4.0 is a powerful, dedicated e-mail solution for your entire office. But unlike Lotus's Notes—which supports Windows 3.x, Windows 95, OS/2, Unix, and NetWare—Exchange Server runs only under Windows NT.

A. Exchange Server uses a familiar **Explorer-like interface.**

B. The **Message Store,** a universal database, stores a variety of objects.

C. Like Lotus's Notes, Exchange Server lets you **replicate remote e-mail databases** at scheduled times.




**Road Transfer:** The Exchange client lets you synchronize public folders so you can take the network data you need on the road.

**Low Maintenance** As with most Microsoft server products, installing, managing, and administering Exchange Server is relatively painless. However, the product is not without blemishes.

For starters, its client-side replication doesn't let clients grab nested folders of messages and data objects. For example, if you want a copy of the Pending Projects folder to take with you on the road, as well as all the nested folders within that folder, you have to create individual local copies of each nested folder.

Microsoft has pledged to fix this limitation in the future, but it's doubtful it'll be able to do much about Exchange's other major stumbling block: hefty resource requirements. Exchange's minimum working set (the amount of RAM consumed at run time) is a whopping 16MB. If you go with Microsoft's recommended minimum configuration of 24MB of RAM, Exchange appropriates at least 16MB, leaving only 8MB for Windows NT and any applications you might want to run.

Ultimately, however, you'll want at least 48MB of RAM and possibly two or more CPUs in a symmetric multiprocessing configuration to truly exploit the power of Exchange Server. **RANDALL C. KENNEDY**

**FILEBOX**

**Exchange Server 4.0**

★★★★

**Verdict:** A solid, enterprise-wide e-mail platform that's easy to use and administer.

**Pros:** Exchange Server is extremely easy to install and configure. The Message Store, which holds virtually any kind of file or object data, is a model that others should imitate.

**Cons:** Client-side replication setup is difficult, and Exchange Server requires significantly more horsepower than competing products. Unlike Lotus's Notes, which supports Windows 3.x, Windows 95, OS/2, Unix, and NetWare, Exchange Server supports only Windows NT.

**Competition:** Lotus's Notes offers more power if you need distributed applications and databases, but Exchange Server 4.0's e-mail client is easier to use.

**System Requirements:** Windows NT Server 3.51, 24MB of RAM (48MB recommended).

Price not available at press time
Microsoft Corp.
(800) 426-9400, (206) 882-8080
*Reader Service No. 707*

*Guide to the Ratings:* ★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

# Keep Your Network Virus-Free

Left unchecked, your network can spread viruses faster than runny-nosed kids in daycare. That's why keeping your server and desktops free of the likes of Disk Killer, Screaming Fist, and Freddy Krueger should be a top priority. If you're running Novell's NetWare, three of the best virus-killing solutions include S&S Software's Dr. Solomon's Anti-Virus Toolkit 7.5, McAfee's NetShield 2.3, and Symantec's Norton AntiVirus 2.0.

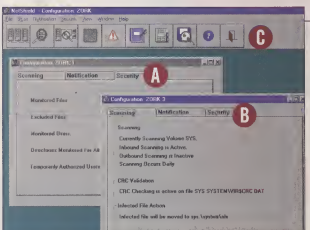
All three programs operate as NetWare-loadable modules and support NetWare Directory Services (NDS), so you can easily take them on and off your network. NetShield is the most affordable of the bunch, Dr. Solomon's offers unique client protection, and Norton Anti-Virus is ideal for sites with multiple servers and a mixture of PC and Macintosh clients.

**Power for a Pittance** At just $399 for 25 nodes, McAfee's NetShield 2.3 is the least-expensive way to protect your LAN, and a powerful way to do it. Through an administrator's workstation, installing and configuring NetShield is relatively easy because it requires minimal user input. NetShield includes several components, the most important of which is a new administration module called SiteExpress Lite. This module lets you centrally install and distribute McAfee's VirusScan, which supplies data on the latest viruses. NetShield also monitors all inbound and outbound server traffic to stop viruses before they ever enter your network.

Dr. Solomon's Anti-Virus Toolkit 7.5 includes client and server programs that work together to protect your LAN. But there's just one hitch: Dr. Solomon's is the only one of these three programs that uses Terminate and Stay Resident programs (TSRs) for each client on your network. Because it runs at all times, Dr. Solomon's constantly checks for viruses, but it also takes up valuable system resources. It does keep server resources free, however, which makes for better overall server performance.

**Strong Defense** Symantec's Norton AntiVirus 2.0, which offers the same clean interface and power found in other Symantec products, was designed for a multiserver environment. It includes three basic programs for NetWare servers and clients. And it's the only one of these three products that supports Mac clients, so it's great for cross-platform environments. Although it's expensive, Norton AntiVirus is a powerful, full-featured virus-protection package.

Every network ought to include virus protection as a security measure, and these three are good choices for NetWare networks. NetShield is a powerful, inexpensive option; Dr. Solomon's is a good client-side choice; and Norton Anti-Virus is ideal for multiserver, cross-platform sites. RICH SCHWERIN

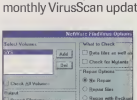



**Nothing a Shot Can't Cure:** Protecting your NetWare network against viruses is a full-time job. McAfee's NetShield 2.3 is an inexpensive and easy way to protect your network from digital diseases. Plus, NetShield includes SiteExpress Lite for monthly VirusScan updates.

**A.** Manage servers and **clients** through tabbed dialog boxes.

**B.** NetShield scans both **inbound and outbound** network transfers.

**C.** The **toolbar** lets you quickly access ten frequently used administrative functions.




**Client Responsibilities:** Dr. Solomon's Anti-Virus Toolkit 7.5 uses a constantly running client-side program to patrol likely infection sources.

## FILEBOX

### Dr. Solomon's Anti-Virus Toolkit 7.5

★★★★

**Verdict: Unique client-side protection makes virus checking easy.**

**Pros:** Powerful analysis engine detects unknown viruses.

**Cons:** The constantly running client software hogs system resources.

$1,775 est. street price
S&S Software Int'l
(800) 701-9648, (617) 273-7400
*Reader Service No. 708*

### NetShield 2.3

★★★★

**Verdict: Powerful and affordable network-virus protection.**

**Pros:** At only $399, it's by far the most affordable network virus protection you can buy.

**Cons:** Loading virus updates via SiteExpress Lite could be easier.

$399 est. street price
McAfee Associates
(800) 332-9966, (408) 988-3832
*Reader Service No. 709*

### Norton AntiVirus 2.0

★★★★

**Verdict: Highly effective, cross-platform virus protection.**

**Pros:** Powerful NDS support; perfect for multiple-server, cross-platform environments.

**Cons:** Administration could be made easier by grouping servers into domains.

$1,399 est. street price
Symantec Corp.
(800) 441-7234
(503) 334-6054
*Reader Service No. 710*

*Guide to the Ratings:* ★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

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RAVEN id MATURE M AGES 17+

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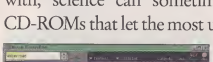
# CD-RONWhite

# Turn It Up

Those whom the gods would destroy, they first give a love of music and tin ears. Nothing's so pitiful as a person who would love to make music but has absolutely no talent. I should know. Still, what the gods haven't blessed us with, science can sometimes provide. Here are some CD-ROMs that let the most unmusical of us enjoy music.



**Music Mania:** Check out more than 100,000 entries in Music Central.

## MUSIC CENTRAL ●●●●

Sure, the name of the song is right on the tip of your tongue. A lot of good that does you. Give up on those decaying brain cells and get Music Central. Microsoft has applied the slick, intelligent treatment developed in its Cinemania CD to a Windows 95/Windows NT disc that covers popular music from Stephen Foster to White Zombie. The huge database of videos and reviews lets you search by performer, album, or song name. And new reviews on the Microsoft Network keep this CD up-to-date. If there's any problem with the disc, it's that it tries to be too evenhanded—a whole video is wasted on Donny Osmond. I hope, like Cinemania, Music Central will grow from almost perfect to a prime example of how to make a multimedia CD.

**Music Central** / Microsoft / (800) 426-9400, (206) 882-8080 / $45 est. street price / *Reader Service No. 450*

## MEET MEDIA BAND ●●●●●

I have absolutely no idea what this CD is, really. But I do know this: Meet Media Band is one of the most original, entertaining Windows CD-ROMs I've seen. Basically, it's a collection of music, animations, and videos that change as you click on different parts of the screen. You can combine all of the elements and create your own ultracool video to show off to friends and coworkers. There's also a video story, which can have 15 different endings, about four characters who form a rock band. I never figured out the story, but I don't care. I was having too much fun clicking willy-nilly to transform the music and video into MTV-gone-schizoid. All this frenzied activity comes at a high cost, though—at least 16MB of RAM is needed to run this CD. But the result is mind-blowing. I had to tear myself away before I got sucked into this cyberworld, never to be heard from again.

**Huh?** We don't know what Meet Media Band is, but we like it anyway.

**Meet Media Band** / Center Technology / (800) 381-0201, (415) 387-0400 / $50 est. street price / *Reader Service No. 451*

## DISCOVERING MUSIC ●●●●

Uh-oh, this one has a manual. That's rare among CDs, but this time you need it. Discovering Music is as much for the serious music student as Meet Media Band is for someone who wants to goof off. Discovering Music has two parts. One contains music history and theory piled high with text and audio examples, as well as a music writer that translates the different notes you place on a music staff into sounds that you can play and record. In the other part, a complicated software-based sound-mixing board makes VCR controls look like a baby's rattle. The closest this disc comes to fooling around is in its Jammin' Keys section. It lets you bang on an onscreen MIDI keyboard and drums, and record the results. This is a good CD for someone who really wants to write music—over the head of a dabbler.

**Discovering Music** / Voyetra Technologies / (800) 233-9377, (914) 966-0600 / $49 est. street price / *Reader Service No. 452*

## SOUND SUITE FOR WINDOWS ●●●

Sound Suite for Windows, also from Voyetra, is like Discovering Music, only more so. Actually, Sound Suite doesn't contain a section on music history, but it makes up for it by packing in more technical software for recording, editing, and playing MIDI, WAV, and video files. Sound serious? It is. If you want to do something with multimedia

●●●●● *Let's rock 'n' roll!* ●●●● *Let's boogie on down.* ●●● *Let's boogie back up again.* ●● *Let's get a new stereo.* ● *Let's forget it.*

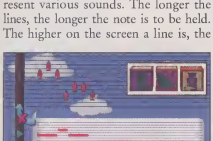
PHOTOGRAPH BY JAMES McGOON

sound but can't find the tool for it in Sound Suite for Windows, then it probably can't be done.

**Sound Suite for Windows** / Voyetra Technologies / (800) 233-9377, (914) 966-0600 / $99 est. street price / *Reader Service No. 453*

## MORTON SUBOTNICK'S MAKING MUSIC ○○○○○

Any kid can draw a picture if you give them a piece of paper and crayons. Morton Subotnick wrote this Windows and Macintosh CD to give children the same natural ease when it comes to composing music. Some sections introduce children to the idea of rhythm and melody and let them create music. Instead of standard music notation, Making Music lets kids use simple lines in different colors to represent various sounds. The longer the lines, the longer the note is to be held. The higher on the screen a line is, the



**Tunes for Tots:** Making Music brings color and fun to music creation.

higher the pitch. Literally child's play. But this musically inept adult likes to play with it, too.

**Morton Subotnick's Making Music** / The Voyager Company / (800) 446-2001, (212) 431-5199 / $30 est. street price / *Reader Service No. 454*

## SMARTSOUND FOR MULTIMEDIA ○○○○○

What's that you say? You need to have a multimedia presentation done this afternoon, and it has to be a killer? Well, for the visuals you're on your own, boopsie. But don't sweat the musical background. Slip SmartSound For Multimedia into your CD-ROM drive, and click on a few buttons to tell the program you need an opener, segue, background, finale piece, or whatever. You can also describe the type of effect you want the music to have, and how long the music needs to be. The software does the rest and creates a musical score. If you want to fiddle with the results, you can use the editor to tinker endlessly and piece together scores for different sections of your presentation. The only easier way to create music is by humming.

**SmartSound For Multimedia** / Sonic Desktop Software / (800) 454-1900, (818) 718-9999 / $129 est. street price / *Reader Service No. 455*

## MELODY MAESTRO ○○○○

With Melody Maestro you do create music by humming. The program is similar to SmartSound, but while SmartSound makes choices from prerecorded snippets of music, Melody Maestro generates original tunes based on programmed rules in the CD. The result is that Melody Maestro creates a different melody each time you ask, even if you don't change the settings. This CD has a wide range of music descriptions to choose from, not just upbeat tunes. You can also create a tune by humming into a microphone that's connected to your sound card. I had little success with this approach, however. The disc picked up only a few of the notes I hummed, regardless of how I twiddled with the settings. All humming aside, Melody Maestro gives you more options than SmartSound does, but at the cost of being more complex to use.

**Melody Maestro 2.0** / The Blue Ribbon SoundWorks / (800) 226-0212, (770) 392-7490 / $50 est. street price / *Reader Service No. 456*

## VUSIC ○○○

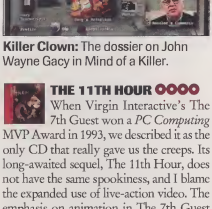
If you are a congenital bottom-crawler in the music world, your only hope to enjoy music with your PC may be Vusic-The Screen Raver. It's a screen saver with pulsing abstract shapes and designs that bounce in rhythm to a music CD playing in your CD drive. If you're as much of a loser artistically as you are musically, you can also use your mouse to doodle with Vusic's shape brushes. Cute. I'm surprised no one thought of this before.

**Vusic-The Screen Raver** / Millennium Media Group / (800) 892-6848, (215) 625-8888 / $20 est. street price / *Reader Service No. 457*

## MIND OF A KILLER ○○○○

If music soothes the savage breast, the people featured in this CD must have broken stereos. Mind of a Killer is a multimedia look at some of society's most infamous butchers, from Jack the Ripper to Jeffrey Dahmer. A lot of the CD is hyperlinked text—four complete books—but the eeriest parts are the 80 minutes of video interviews with the murderers. For example, John Wayne Gacy laughs off the idea that he would have sex with dead bodies—as if that were something no respectable serial killer would do. Despite expert attempts to explain these killing minds, the CD doesn't really get to their souls. But then, what could?

**Mind of a Killer** / Cambrix Publishing / (800) 992-8781, (818) 992-8484 / $30 est. street price / *Reader Service No. 458*




**Killer Clown:** The dossier on John Wayne Gacy in Mind of a Killer.

## THE 11TH HOUR ○○○○

When Virgin Interactive's The 7th Guest won a *PC Computing* MVP Award in 1993, we described it as the only CD that really gave us the creeps. Its long-awaited sequel, The 11th Hour, does not have the same spookiness, and I blame the expanded use of live-action video. The emphasis on animation in The 7th Guest left plenty of room for your imagination to fill in the details. (And one's imagination is always their worst nightmare.) The video in The 11th Hour is a technical breakthrough—a large, wide-screen image achieved without the use of special hardware. But the video in this DOS game is overacted, the worst sin you can commit if you're trying to scare someone; overacting turns horror into humor. Video aside, there's plenty on this four-CD set to please enthusiasts of The 7th Guest—the same deliciously hard riddles, the same eerie artwork, and the relentlessly threatening music. If you're a fan, go for it. But expect to spend too much time as a PC potato.

**The 11th Hour** / Virgin Interactive / (800) 874-4607, (714) 833-8710 / $55 est. street price / *Reader Service No. 459*

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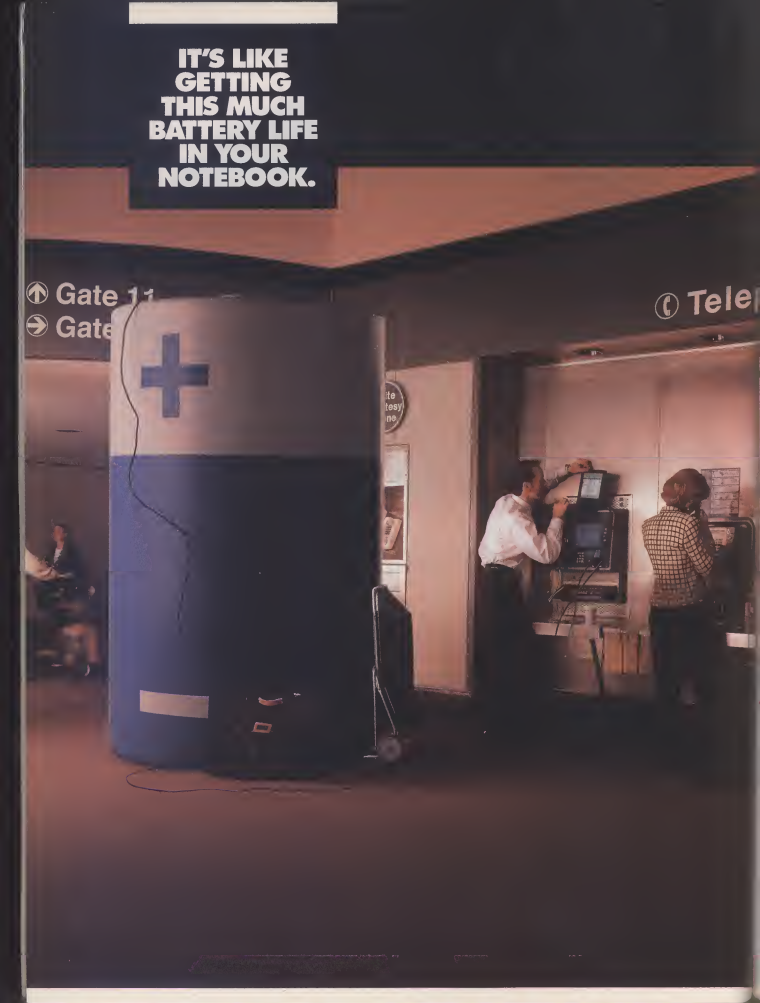
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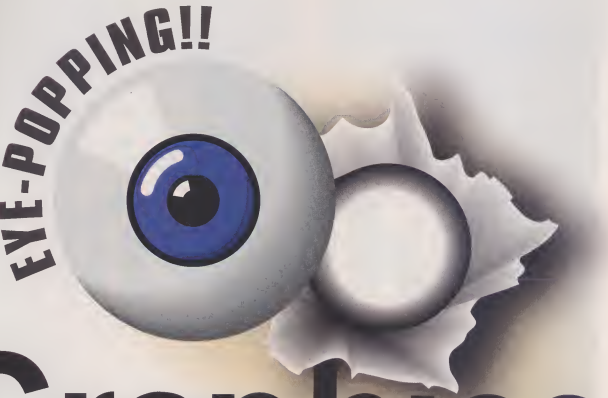


# Graphics Superguide

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**Solutions:** Whether you work at home, in a large company, or at a design studio, we have the answer to your graphics needs. 104

**Flatbed Color Scanners:** Get the best image possible. 110

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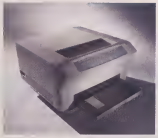


# Ultimate Graphics Toolkit

Face it—Picasso you're not. But in today's fast-pace, competitive markets, the pages you produce have to look good. Whether you're preparing a business proposal, dressing up a Web page, or doing prepress publishing work, you've got to grab your audience's attention. And that means a whole lot more than adding boldface highlights and exclamation points. You need quality color, professional-looking graphics, and eye-catching typography.

But when you spring for that costly hardware and high-end graphics software, you want to be sure you're getting the right tools for your job. Choose a product that's not up to the task, and you'll waste a lot of time trying to coax it beyond its limits. Go for top-of-the-line wares, and you may end up with something too complex for your needs—and your skill level—leaving you frustrated and annoyed.

Our superguide steps you through the process of pinpointing your graphics needs and matching them to the best products. We start by examining the ways you work, identifying three primary user profiles: small-office, home-office (SOHO); corporate office; and design studio. Within each category we present two solutions—one for people who can afford the very best and another for the budget-conscious buyer.

To find the right hardware, we examined 11 color flatbed scanners and 11 color printers in *PC Computing*'s Performance Labs. We also put six popular illustration programs and six leading image-editing applications through a usability evaluation. Finally, we compiled a resource guide to help you locate the graphics utilities, fonts, clip art, and digital stock-photography products that will make you more productive. In all, we brought together more than 100 products to choose from. Whether you're a newcomer or a seasoned professional, our Superguide is the perfect place to find the products best suited to your needs.

PHOTOGRAPHS BY MARK JOHANN

BY MARTY BEAUDET

# Make a Good Impression

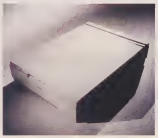
A homemade image is a big plus for cookies and pies, but it's the last thing you want for your presentations and proposals. Just because you decided to set up your own business at home doesn't mean the work you convey to your clients has to be any less professional than what the bigger outfits turn out.

Thanks to recent strides in technology, no one has to know whether your output is the work of a lone genius or a team of professionals. Nor do they need to know how much it cost to produce it. Today's less expensive products make you look like a million bucks for only a few thousand. And if you want to spend a bit more, you can go head-to-head with the big guys—

## Ideal SOHO Solution: $8,576

### Dell Dimension XPS P166c

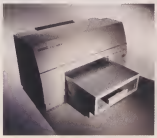
It's one of the fastest Pentium systems we've tested (see "Desktop Supersystems," March, page 132). This 166MHz PC comes with 32MB of RAM, a 17-inch monitor, Number Nine's Imagine 128 video accelerator, Quantum's Fireball hard drive, and Teac's six-speed CD-ROM drive. Creative Labs' Sound Blaster AWE32 fills out the multimedia package. Throw in Iomega's Jaz drive ($599) with a removable storage capacity of 1GB, and you'll store unlimited gigabytes of graphics. The whole setup costs about $4,800.



### Canon IX-4025

This scanner has it all. It's fast, compact, easy to use, and produces great-looking scans at an incredible price.

- **Price:** $590.*
- **Color Depth:** A 24-bit scanner, it recognizes up to 16 million colors.
- **Resolution:** Real resolution is 300 by 600 dpi; 1,200 dpi is possible through software interpolation.
- **Software Bundle:** Light Source's Ofoto 2.0 and Caere's OmniPage LE 4.0 OCR software.
- **Options:** An automatic document feeder for $249*. No transparency unit.



### Hewlett-Packard DeskJet 1600CM

HP's printer provides the best looking ink-jet output at respectable speeds. And it's network ready.

- **Price:** $1,999* (as tested).
- **Engine Type:** Color ink-jet.
- **Resolution:** Prints color pages at a software-enhanced 300 by 300 dpi and black pages at 600 by 600 dpi.
- **Rated Speed:** Prints color pages at 2 ppm and black pages at 8 ppm.
- **PDL Support:** PostScript Level 2 and PCL 5.
- **Media Size:** Accepts paper up to legal size (8.5 by 14 inches).

### Adobe Photoshop 3.0

Still the best all-around image-editing software on the market.

- **Price:** $549.*
- **Uses:** Adjusting scanned images as well as producing artistic and special effects with included or third-party filters.

### Macromedia FreeHand 5

A full-featured, cross-platform application designed for professional illustrators and graphic artists.

- **Price:** $389.*
- **Uses:** Creating full-color illustrations with numerous easy-to-use, vector-based tools and special-effects functions.

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from the comfort of your home office.

Color flatbed scanners and quality color printers, once the domain of studios with liberal cash flow, are now within reach of the most budget-conscious businessperson. And while illustration and image-editing software were once the exclusive province of professional designers, many of today's applications are geared toward the casual user who needs to produce quality results without the benefit of an art degree.

Whether you're on a tight budget or have all the money in the world, whether you work at home or in a small office, you'll find the ideal package to meet your graphics needs among the ones we've assembled here.

## SOHO Profile

*The SOHO user works at home or in a small office, alone or with a handful of others. If you fit this profile, you most likely run your own business or work as a consultant. Most, if not all, of your graphic-design and printing needs are handled in-house. You do your own scanning, photo retouching, and color printing right on your desktop.*

# Budget SOHO Solution: $3,666

### Micron P100 Millennia

Although faster systems exist, this 100MHz Pentium still gives you great performance at a bargain price. With 16MB of RAM, a 15-inch monitor, and Diamond's Stealth64 video accelerator with 2MB of EDO RAM, it's well suited to a home office's graphics needs. It offers Quantum's speedy 1.2GB Fireball hard drive, Sanyo's six-speed CD-ROM drive, and Creative Labs' Sound Blaster Vibra 16 audio card to round out its multimedia components. This setup runs about $2,500. For an extra $100, you can step up to the P133 Millennia.

### Primax DeskScan Color

This budget three-pass, home-office scanner may be slow, but it provides excellent color at an unbeatable price.

- **Price:** $399.*
- **Color Depth:** A 24-bit scanner, it recognizes up to 16 million colors.
- **Resolution:** Real resolution is 300 by 600 dpi; through software interpolation, 1,200 dpi is possible.
- **Software Bundle:** FinishingTouch image-editing software and Xerox's TextBridge OCR software.
- **Options:** A transparency unit for $399*. No automatic document feeder.

### Canon BJC-4100

If you don't need PostScript, this compact ink-jet printer provides respectable performance and output at a bargain price.

- **Price:** $369* (as tested).
- **Engine Type:** Color ink-jet.
- **Resolution:** Prints color and black-only pages at 720 by 360 dpi.
- **Rated Speed:** Prints color pages at just under 1 (0.8) ppm and black pages at 4.5 ppm.
- **PDL Support:** Canon Native.
- **Media Size:** Accepts paper up to legal size (8.5 by 14 inches).

### Corel Photo-Paint 6

The most image-editing muscle you can get for the money, Photo-Paint 6 performs most of the tricks Photoshop does.

- **Price:** $199.*
- **Uses:** Adjusting scanned images, plus achieving artistic and special effects with included or third-party filters.

### CorelXara

An easy-to-use application that lets you design great-looking graphics in minutes.

- **Price:** $199.*
- **Uses:** Creating simple or complex vector-based and bit-mapped graphics in full color, with or without 3-D and transparency effects.

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# Art That Means Business

Until recently, most companies contracted graphics jobs out to professional art studios. But in the last few years—like it or not—graphics have migrated to the desktop. While this gives you more control over the art you turn out, it also saddles you with the responsibility of choosing the appropriate tools for the job.

Fortunately, you don't have to be a trained professional to get high-quality results from scanners and printers. Many products today are targeted squarely at your business, offering the speed, convenience, and networking features you need in the corporate workplace. Their easy installation and

## Ideal Corporate Solution: $13,437

### Micron P150 Millennia

It's not the fastest system, but this 150MHz Pentium won't slow you down either. With 32MB of RAM, a 17-inch monitor, and Diamond's Stealth64 video accelerator, it meets your most demanding graphics needs. It offers Quantum's speedy 1.2GB Fireball hard drive, Sanyo's six-speed CD-ROM drive, plus Creative Labs' Sound Blaster AWE32 audio card. Install Iomega's 100MB removable-media Zip drive ($199), and you'll have no trouble storing large graphics files. The whole setup runs about $3,500.

### Envisions DynamicPro 30

This ideal office scanner delivers incredible 30-bit color at amazing speeds for a reasonable price.

- **Price:** $1,499.*
- **Color Depth:** A 30-bit scanner, it recognizes up to 1 billion colors.
- **Resolution:** Real resolution is 600 by 1,200 dpi; 9,600 dpi is possible through software interpolation.
- **Software Bundle:** No third-party software is included with this product.
- **Options:** A transparency unit for $299*. No automatic document feeder.

### Tektronix Phaser 550

No other color laser printer currently available matches the near-photo-quality output of the Tektronix Phaser 550.

- **Price:** $7,500 list (as tested).
- **Engine Type:** Color laser.
- **Resolution:** With 24MB of RAM installed, it delivers 1,200-by-1,200-dpi resolution, nearly that of an image setter.
- **Rated Speed:** Prints color pages at 5 ppm and black pages at 14 ppm.
- **PDL Support:** PostScript Level 2 and PCL 5.
- **Media Size:** Accepts paper up to legal size (8.5 by 14 inches).

### Adobe Photoshop 3.0

Still the best all-around image-editing software on the market.

- **Price:** $549.*
- **Uses:** Adjusting scanned images as well as producing artistic and special effects with included or third-party filters.

### Macromedia FreeHand 5

A full-featured, cross-platform application designed for professional illustrators and artists.

- **Price:** $389.*
- **Uses:** Creating full-color illustrations with numerous easy-to-use, vector-based illustration tools and special-effects functions.

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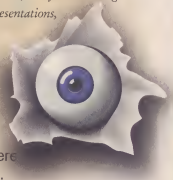
## Corporate Profile

*The corporate user works in a good-size office, most likely in a single department or division of a much larger company. If you match this profile, you probably work as part of a team, and your scanning and color-printing needs are modest. Presentations, handouts, and customer or interoffice communications make up the bulk of your output.*

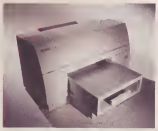


intuitive interfaces let you pay attention to your business rather than your office appliances.

Similar advances have been made in graphics software, but unlike more-structured spreadsheet and word processing packages, these applications offer no ready-made place to begin. There are no predetermined elements: Shapes, colors, photographs, and the like are all left to you to create and organize on the page. If you're not a trained artist, this can be intimidating. Still, there are graphics applications on the market that help simplify the process.

To get you started, we identified graphics solutions that will give you a professional look regardless of your expertise or budget.

## Budget Corporate Solution: $5,748



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## Ideal Corporate Solution: $13,437

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intuitive interfaces let you pay attention to your business rather than your office appliances.

Similar advances have been made in graphics software, but unlike more-structured spreadsheet and word processing packages, these applications offer no ready-made place to begin. There are no predetermined elements: Shapes, colors, photographs, and the like are all left to you to create and organize on the page. If you're not a trained artist, this can be intimidating. Still, there are graphics applications on the market that help simplify the process.

To get you started, we identified graphics solutions that will give you a professional look regardless of your expertise or budget.

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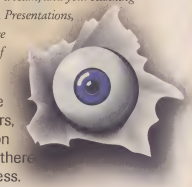

# Budget Corporate Solution: $5,748

### Micron P100 Millennia

Although faster systems exist, this 100MHz Pentium still gives you great performance at a bargain price. With 16MB of RAM, a 15-inch monitor, and Diamond's Stealth64 video accelerator with 2MB of EDO RAM, it's suited to an office's graphics needs. It offers Quantum's speedy 1.2GB Fireball hard drive, Sanyo's six-speed CD-ROM drive, Creative Labs' Sound Blaster Vibra 16 audio card, and 3Com's Ethernet card for network connectivity. This setup runs about $2,600. For an extra $100, you can get the P133 Millennia instead.

### Mustek Paragon 1200SP

It's a bit slower than other scanners, but it delivers excellent high-resolution color for a bargain price.

- **Price:** $699.*
- **Color Depth:** A 30-bit scanner, it recognizes up to 1 billion colors.
- **Resolution:** Real resolution is 600 by 1,200 dpi; 9,600 dpi is possible through software interpolation.
- **Software Bundle:** Micrografx's Publisher LE 5.0, Maxsoft-Ocron's Wordlinx OCR software, and Mustek's Magic Calibrator.
- **Options:** A $299* document feeder and a $299* transparency unit.

### Hewlett-Packard DeskJet 1600CM

This HP printer provides the best looking ink-jet output at superfast speeds. And it's network-ready.

- **Price:** $1,999* (as tested).
- **Engine Type:** Color ink-jet.
- **Resolution:** Prints color pages at a software-enhanced 300 by 300 dpi and black pages at 600 by 600 dpi.
- **Rated Speed:** Prints color pages at 2 ppm and black pages at 8 ppm.
- **PDL Support:** PostScript Level 2 and PCL 5.
- **Media Size:** Accepts paper up to legal size (8.5 by 14 inches).

### CorelDraw 6

This easy-to-use graphics powerhouse meets all your office graphics needs.

- **Price:** $450.*
- **Uses:** Creating simple or complex vector-based illustrations in full color.

### Corel Photo-Paint 6

The most image-editing muscle you can get for the money, Photo-Paint 6 performs most of the tricks Photoshop does.

- **Price:** Free with CorelDraw 6 ($199* separately).
- **Uses:** Adjusting scanned images, plus achieving artistic and special effects with included or third-party filters.

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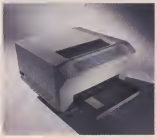
**Solutions:** The Best Tools for the Professional Designer

# Expert Graphics

Art is your business. Whether you run a small studio or a bustling service bureau, your clients pay to see top-notch results. Accurate color is a must, and if you settle for second-rate hardware or inadequate software, your customers may turn to someone else.

Until recently, you had only a few, very expensive options in the way of color flatbed scanners and color output devices for professional use. The entire graphics industry has downsized, however, and today even the most serious designers are producing digital wonders on their desktops. The computer industry has responded with a flood of affordable desktop-based

## Ideal Studio Solution: $31,065



### Dell Dimension XPS Pro200

This Pentium Pro system was the fastest in our tests (see "Desktop Supersystems," March, page 132). With 64MB of RAM, a 21-inch monitor, and Number Nine's Imagine 128 video accelerator (with 4MB of VRAM), it runs Windows NT at 200MHz. Seagate's 2.1GB Barracuda hard drive, Teac's six-speed CD-ROM drive, and Creative Labs' Sound Blaster AWE32 sound card are all included. For $200, Iomega's 100MB Zip drive lets you exchange cartridges. The whole setup runs about $7,700.

### Umax PowerLook II

Speed, color accuracy, and resolutions of up to 9,600 dpi make this a top-notch professional scanner. A transparency unit is included.

- **Price:** $3,000.*
- **Color Depth:** A 36-bit scanner, it recognizes up to 68 billion colors.
- **Resolution:** Real resolution is 600 by 1,200 dpi; software interpolation affords up to 9,600 dpi.
- **Software Bundle:** Adobe's Photoshop 3.0, MetaTool's Kai's Power Tools SE 3.0, Pixar's Typestry, and Umax's MagicMatch.
- **Options:** No automatic document feeder.

### Tektronix Phaser 480X

Provides magnificent color photo-quality output.

- **Price:** $19,995 list (as tested).
- **Engine Type:** Dye sublimation.
- **Resolution:** With this technology, 300-by-300-dpi is all that's needed to produce quality results.
- **Rated Speed:** Tabloid-size dye-sublimation pages print at 0.31 ppm.
- **PDL Support:** PostScript Level 2, which satisfies the needs of professional design studios.
- **Media Size:** Accepts specially coated paper up to 12.6 by 18.3 inches.

### Adobe Photoshop 3.0

Still the best all-around image-editing software on the market.

- **Price:** Free with Umax's PowerLook II ($549* separately).
- **Uses:** Adjusting scanned images, plus producing artistic and special effects with included or third-party filters.

### Adobe Illustrator 4.1

This cross-platform standard should meet the needs of any graphics pro.

- **Price:** $370 list.
- **Uses:** Creating full-color, vector-based illustrations, and generating special effects with third-party plug-ins like MetaTool's KPT Vector Effects.

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solutions. Lower production costs and faster turnaround times make your business more competitive.

But before you can turn out eye-catching graphics, you must create them. As a professional, you know what you're doing, but does your software? Not every bargain illustration or image-editing package can bring your ideas to life. Choose the wrong one, and you'll need more than a few workarounds to get what you want from it. If you require professional results, you must choose carefully.

Our Superguide is designed to help. In the scenarios outlined below, we put together an ideal package for the graphics professional as well as a budget solution for those with a limited amount of cash.

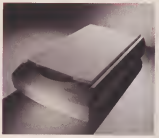
## Studio Profile

*The studio user is an artist, prepress technician, or other graphics professional. If you fit this profile, graphics are the heart and soul of your business. You most likely work in a service bureau or studio, and you design original art or prepare prepress work for a variety of clients. Precise scans and accurate color are essential to your work.*

# Budget Studio Solution: $11,372

### Micron P133 Millennia

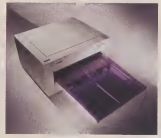
It's not the fastest, but this 133MHz Pentium system gives you the performance you need at an affordable price. With 32MB of RAM, a 17-inch monitor, and Diamond's Stealth64 video accelerator with 2MB of EDO RAM, it's well prepared to handle typical graphics needs. It also offers Western Digital's 1.6GB Caviar hard drive, Sanyo's six-speed CD-ROM drive, and Creative Labs' Sound Blaster Vibra 16 audio card. If you need network options, add a 3Com Ethernet card for $120. The complete setup runs about $3,500.



### Microtek ScanMaker III

A lower interpolated resolution than that of Umax's PowerLook II doesn't hurt this scanner's output. A transparency unit is included.

- **Price:** $1,999.*
- **Color Depth:** A 36-bit scanner, it recognizes up to 68 billion colors.
- **Resolution:** Real resolution is 600 by 1,200 dpi; 2,400 dpi is possible through software interpolation.
- **Software Bundle:** Adobe's Photoshop 3.0 and Caere's OmniPage LE OCR software.
- **Options:** An automatic document feeder for $400*.



### Fargo Pictura 310e

If you can settle for slower output, you'll get thermal wax and dye sublimation for an incredible price.

- **Price:** $4,995* (as tested).
- **Engine Type:** Thermal wax and dye sublimation.
- **Resolution:** This printer's 300-by-300-dpi resolution is not discernible in the continuous-tone dye-sublimation mode.
- **Rated Speed:** Prints 0.25 ppm in thermal-wax mode and 0.09 ppm in dye-sublimation mode.
- **PDL Support:** PostScript Level 2.
- **Media Size:** Accepts paper up to tabloid-extra size (12 by 20 inches).

### Macromedia xRes 2.0

The remarkably fast xRes is the perfect complement to Adobe's Photoshop, and it handles larger files.

- **Price:** $489.*
- **Uses:** Adjusting scanned images as well as creating special effects with included or third-party filters.

### Macromedia FreeHand 5

A full-featured, cross-platform application designed for professional illustrators and artists.

- **Price:** $389.*
- **Uses:** Creating full-color illustrations with numerous easy-to-use, vector-based illustration tools and special-effects functions.

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# Instant Image Capture

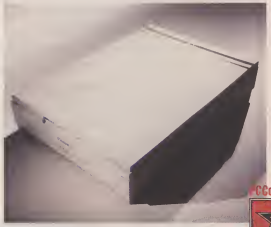
If you're serious about graphics, you've got to have a color flatbed scanner, no two ways about it. But choosing the right one can be tricky. We looked at 24-bit, 30-bit, and 36-bit scanners, and found that a few extra bits can make a world of difference. To help you pick the best product for your needs, we identified the ideal scanner choices for the small or home office, for the corporate workplace, and for the design studio in the Decision Maker on page 112.

**Scanner Options, Bit by Bit** The 24-bit scanners, which you can pick up for less than $700, fit both the requirements and the budget of a small or home office. We tested four: Canon's IX-4025, Envisions' 8800S, Primax's DeskScan Color, and Tamarack's ArtiScan Pro 6000C.

For corporate office use, we put five 30-bit scanners to the test: Envisions' DynamicPro 30, Epson's ES-1200C, Hewlett-Packard's ScanJet 4c, Mustek's Paragon 1200SP, and Pacific Image Electronics' ScanAce II. These five scanners add a lot of color: 30-bit scanners can handle more than a billion colors.

Finally, we looked at two industrial-strength scanners for design studios, which recognize up to 68 billion colors: Umax's PowerLook II and Microtek's ScanMaker III.

**Color and Speed Count** Predictably, the higher the scanner's color depth (measured in bits), the better the image quality was. All of the 30-bit scanners delivered comparable color quality, despite a wide range in price. Of the 36-bit scanners, Umax's PowerLook II gave the best color results. But in the 24-bit group, it was the least expensive scanner—Primax's DeskScan Color—that got top honors from our jury testers for color quality.



PCComputing BEST

**Best Overall:** Even higher-resolution scanners can't beat the speed, image quality, and value of Canon's 24-bit IX-4025.

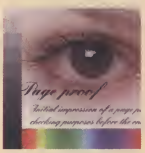
Speeds varied widely among the scanners. The 24-bit scans from the DeskScan Color were accurate, but this three-pass scanner took six times as long as Canon's and Envisions' scanners. Yet the scan quality of the faster units nearly matched that of the Primax.

Among the 30-bit and 36-bit scanners, which also had a wide range of times, the best scans arrived fastest: Envisions' DynamicPro 30 was twice as fast as the other 30-bit offerings, and it captured the best color. The same was true of Umax's PowerLook II. It just goes to show that you don't always need to trade image quality for performance gains. All things considered, though, the eyeball test is what really counts.

## Eye-Pleasing Color Scans

**How Many Bits?** The primary factor that sets high-end, midrange, and low-end scanners apart is color depth—measured in bits. The higher the bit count, the more colors a scanner can recognize. While most images don't contain millions of colors, a wider range results in greater accuracy.

**24 Bits:** Canon's IX-4025 scanner can capture up to 16.7 million colors.




**30 Bits:** Envisions' DynamicPro 30 registers 1 billion colors.

**36 Bits:** Your eyes can't see all 68 billion hues of Umax's PowerLook II.

# Top Flatbed Color Scanners

| 24-Bit Scanners | Price* | Number of Passes | Color Depth | Real/Interpolated Resolution | Bundled Software | Transparency Unit | Verdict |
|---|---|---|---|---|---|---|---|
| **Canon IX-4025** (800) 423-2366 *Reader Service No. 712* | $590 | 1 | 16.7 million colors | 300 by 600 dpi/1,200 by 1,200 dpi | Light Source Ofoto 2.0, Caere OmniPage LE 4.0 | Optional $249 | ★★★★★ The best overall value. Fast, compact, accurate, and easy to use. |
| **Envisions 8800S** (800) 365-7226 *Reader Service No. 713* | $699 | 1 | 16.7 million colors | 400 by 8,000 dpi/6,400 by 6,400 dpi | Adobe Photoshop 3.0 | Optional $199 | ★★★★ Best scan resolution and nearly as fast as the Canon. Highly customizable drivers. |
| **Primax DeskScan Color** (800) 338-3693 *Reader Service No. 714* | $399 | 3 | 16.7 million colors | 300 by 600 dpi/1,200 by 1,200 dpi | Finishing Touch 1.1, Xerox TextBridge | Optional $399 | ★★★ Low price and dazzling color, but slow performance. |
| **Tamarack ArtiScan Pro 6000C** (800) 598-3918 *Reader Service No. 715* | $539 | 3 | 16.7 million colors | 600 by 600 dpi/4,800 by 4,800 dpi | Adobe Photoshop LE, Readiris OCR | Optional $425 | ★★ Easy to set up, but sluggish and produces only fair results. |
| **30-Bit Scanners** | | | | | | | |
| **Envisions DynamicPro 30** (800) 365-7226 *Reader Service No. 716* | $1,499 | 1 | 1 billion colors | 600 by 1,200 dpi/9,600 by 9,600 dpi | None | Optional $299 | ★★★★★ Twice as fast as the other 30-bit scanners, and delivers the best color fidelity. Well worth the price. |
| **Epson ES-1200C** (800) 289-3776 | $1,200 | 1 | 1 billion colors | 600 by 600 dpi/4,800 by 4,800 dpi | Adobe Photoshop 2.5, MetaTools Kai's Power Tools 3.0 | Optional $679 | ★★★★ Results are about as good as the DynamicPro 30's—for less money—but they take longer. |
| **Hewlett-Packard ScanJet 4c** (800) 722-6538 *Reader Service No. 717* | $995 | 1 | 1 billion colors | 600 by 600 dpi/2,400 by 2,400 dpi | Corel Photo-Paint 5, Caere OmniPage LE, Visioneer PaperPort Viewer | Optional $650 | ★★★★ Fine color and line art; speedy previews. |
| **Mustek Paragon 1200SP** (800) 468-7835 *Reader Service No. 718* | $699 | 1 | 1 billion colors | 600 by 1,200 dpi/9,600 by 9,600 dpi | Micrografx Picture Publisher LE 5.0, Maxsoft-Ocron Wordlinx OCR | Optional $299 | ★★★ You get what you pay for: fine color, but middling performance. |
| **Pacific Image Electronics ScanAce II** (800) 909-9996 *Reader Service No. 719* | $599 | 1 | 1 billion colors | 600 by 600 dpi/1,200 by 4,800 dpi | Ulead ImagePals Go | Optional $496 | ★★★ Pleasing color, but average performance and price. |
| **36-Bit Scanners** | | | | | | | |
| **Umax PowerLook II** (800) 562-0311 *Reader Service No. 720* | $3,000 | 1 | 68 billion colors | 600 by 600 dpi/9,600 by 9,600 dpi | Adobe Photoshop 3.0, Pixar Typestry, MetaTools Kai's Power Tools SE 3.0 | Built in | ★★★★★ Excellent all around. Worth its high cost, if your budget allows. |
| **Microtek ScanMaker III** (800) 654-4160 *Reader Service No. 721* | $1,999 | 1 | 68 billion colors | 600 by 1,200 dpi/2,400 by 2,400 dpi | Adobe Photoshop 3.0, Caere OmniPage LE 4.0 | Built in | ★★★★ Stellar color and performance, and laden with software, but low resolution. |

*ESTIMATED STREET PRICE OF TESTED CONFIGURATION

★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

# Color Scanner Smarts

The scanners we tested range from less than $400 to $3,000. What's the common thread? Color input—but speed and color accuracy are what set them apart. Fortunately, you might not have to spend a lot to get great scans in a hurry.

If you're looking for an inexpensive scanner for your home office, Primax's DeskScan Color is a good bet, but it's slow. Canon's somewhat more expensive IX-4025 has it all: pleasing color, sharply defined lines, speed, and a small size.

In a corporate setting, color quality and performance are even more important. Graphics-intensive departments need to crank out high-quality images fast for Dilbert-style managers who wanted them yesterday. For resolution and color quality, all the 30-bit scanners were even in our jury's judgment; only Envisions' DynamicPro 30 and Epson's ES-1200C produced results in short order. Even then, the DynamicPro 30 was twice as fast as the ES-1200C.

In a service bureau or design studio, paying clients always demand perfect scans, and they usually want them in a hurry. So it's no surprise that you have to pay more for a scanner that gives you the combination of high speed and professional quality. Umax's PowerLook II, which produced marginally better results than Microtek's ScanMaker III, got the job done more than twice as fast.

Of course, since your principal interaction with a scanner is through software, programs that come bundled with the scanner are also a key factor to consider. While most of these packages provide limited editions of image-editing and OCR programs, both 36-bit scanners come with a full version of Adobe's Photoshop, a $549 value. When you're ready to buy, be sure to inquire about bundled options: They are subject to change and can add value to your scanner purchase, especially if you plan to buy the bundled software anyway.

---

BILL FIELDS *designs and writes copy for sites on the World Wide Web. He has been evaluating scanners for corporate purchases for more than six years.*

## DECISION MAKER

CHOOSE THE RIGHT **COLOR SCANNER** FOR YOUR BUSINESS

| 1 Identify your working environment. | 2 Choose the factor that's most important. | 3 Choose the next most important factor. | 4 For your needs, the best product to buy is . . . |
|---|---|---|---|
| SOHO | Performance | Features | Canon IX-4025 |
| | | Price | Canon IX-4025 |
| | Image Quality | Features | Envisions 8800S |
| | | Price | Primax DeskScan Color |
| Corporate Office | Performance | Features | Envisions DynamicPro 30 |
| | | Price | Hewlett-Packard ScanJet 4c |
| | Image Quality | Features | Envisions DynamicPro 30 |
| | | Price | Epson ES-1200C |
| Design Studio | Performance | Features | Umax PowerLook II |
| | | Price | Microtek ScanMaker III |
| | Image Quality | Features | Umax PowerLook II |
| | | Price | Microtek ScanMaker III |

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*Windows Magazine*
September 1995

*"Corel continues to lead the pack with native Windows® 95 applications and will usher in the age of the graphics suite... Corel has made significant Windows 95-related feature enhancements and additions to CorelDRAW 6, including better interface consistency, across all the applications included in CorelDRAW 6, faster output and redraw, and multithreading."*

*PC Magazine*
September 1995

*"CorelDRAW satisfies the productivity hungry... While Draw continues to be the most feature-rich and flexible illustration program for Windows (or perhaps for any platform), as well as the best value, it's good to see Corel delivering a more productive and accurate tool to their professional users."*

*Windows Sources*
August 1995

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# Output with Impact

Color gets results. Audiences remember color, and color sets you apart from your competitors. Making the decision to buy a color printer is the easy part—deciding on the best printer for you requires a closer look.

If you need color but can't spend much money, an ink-jet printer is your best choice. If you need a printer that can also serve as your everyday black-and-white printer, a color laser will best fill that bill. Finally, if only the best output will do, you need a thermal-wax or dye-sublimation printer. In all cases, it's important that the printer support the PostScript Level 2 page description language (PDL), which is used by many graphics applications.

**Ink Jet** You don't have to break the bank to get great-looking color. In fact, you can get Canon's BJC-4100 ink jet for under $400. While its output quality wasn't as impressive as that of the other printers we tested, it's hard to beat the price. Like other color ink-jets, the BJC-4100's average cost per page is a bit more than that of color lasers. Hewlett-Packard's DeskJet 1600CM is a great ink-jet printer for those who might not be ready to pay the high price of a color laser printer. The DeskJet gives you great-looking text and graphics at speeds faster than other ink-jet competitors, and network connections are included.

**Laser** A color laser printer is the best way to go if you demand low-cost, high-speed, high-quality output. Not only do you get an everyday laser printer, but also you reap the benefits of color. Tektronix's new Phaser 550 serves any department well with its beautiful output, fast speeds, and built-in network connectivity. In addition, the Phaser 550 offers resolution of 1,200 dots per inch at a per-page cost of just 19 cents.

**Best Overall:** Tektronix's Phaser 550 color laser generates high-res output with colors nearly as rich as a dye-sub printer's.

**Thermal Wax and Dye Sublimation** Graphics professionals are in a class by themselves, and so are the printers they require. General Parametrics' Spectra Star 280 is a versatile thermal-wax printer that produces output well suited for presentation graphics and color composites, although the output speed was slow in our tests.

If photorealistic output is a top priority for you, you owe it to yourself to spend the money (about $20,000 including extra memory) on Tektronix's Phaser 480X. Keep in mind, however, that dye sublimation isn't as versatile as other technologies, so you sacrifice quality in text output. The special coated paper that dye-sub printers require pushes the total cost per tabloid-size page as high as $8 to $10 dollars. KYLA K. CARLSON

## An Eye for Print Quality

**Ink, Toner, or Dye?** The substance on the paper differs with each of the printer technologies represented here. Color accuracy, saturation, and durability vary as well, with color-laser technology giving the best overall results. The dye-sub output seen here requires special coated paper.

**Ink Jet:** HP's DeskJet 1600CM shines for far less than a color laser.

**Laser:** Lexmark's Optra C produced smooth colors true to our original image.

**Dye Sub:** Tektronix's Phaser 480X yields near-photo-quality output.

# Top Color Printers

| Ink Jet | Price* | Rated Speed (ppm) | Tested RAM/ Maximum RAM | Resolution | Maximum Paper Size | Languages Supported | Verdict |
|---|---|---|---|---|---|---|---|
| PC Computing TEST **Hewlett-Packard DeskJet 1600CM** (800) 752-0900 *Reader Service No. 722* | $1,999 | 2 color, 8 black | 6MB/70MB | 300 by 300 dpi color, 600 by 600 dpi black | 8.5 by 14 inches (A4) | PostScript Level 2, PCL 5 | ★★★★★ The best-looking ink-jet text quality you'll find, and blazingly fast. |
| **Canon BJC-4100** (800) 423-2366 *Reader Service No. 723* | $369 | 0.8 color, 4.5 black | 64K/64K | 720 by 360 dpi inches (legal) | 8.5 by 14 inches (legal) | Canon Native | ★★★★ Not the best output, but solid performance for the budget-conscious user. |
| **Tektronix Phaser 140** (800) 835-6100 *Reader Service No. 724* | $1,495 list | 1 color and black | 8MB/24MB | 360 by 360 dpi | 8.5 by 22 inches (custom) | PostScript Level 2 | ★★★★★ Consistently the slowest printer in the bunch, but output is crisp and bright. |
| **Lexmark Jetprinter 4079 plus** (800) 891-0331 *Reader Service No. 725* | $2,699 | 1 color, 1.7 black | 4MB/36MB | 360 by 360 dpi | 11 by 17 inches (tabloid) | PostScript Level 2, PCL 5 | ★★★ Pricey, and text is a bit blurry, but graphics output is superb. |
| **Laser** | | | | | | | |
| PC Computing TEST **Tektronix Phaser 550** (800) 835-6100 *Reader Service No. 726* | $8,190 list | 5 color, 14 black | 24MB/72MB | 1,200 by 1,200 dpi | 8.5 by 14 inches (legal) | PostScript Level 2, PCL 5 | ★★★★★ Higher resolution still translates to ultraclean output, and performance is snappy. |
| **Lexmark Optra C** (800) 891-0331 *Reader Service No. 727* | $6,899 | 3 color, 12 black | 32MB/64MB | 600 by 600 dpi | 11 by 17 inches (tabloid) | PostScript Level 2, PCL 5 | ★★★★★ High speeds and good-looking output, particularly with photographs. |
| **QMS magicolor CX** (800) 523-2696 *Reader Service No. 728* | $6,499 | 6 color, 12 black | 20MB/64MB | 600 by 600 dpi | 8.5 by 14 inches (legal) | PostScript Level 2, PCL 5 | ★★★ Fast, with a competitive price, but only average output quality. |
| **Xerox XPrint 4920** (800) 349-3769 *Reader Service No. 729* | $7,195 | 3 color, 12 black | 16MB/48MB | 600 by 600 dpi | 8.5 by 14 inches (legal) | PostScript Level 2, PCL 5 | ★★★ Output quality can't match the competition's, even though the price is higher. |
| **Wax/Dye Sub** | | | | | | | |
| PC Computing TEST **General Parametrics Spectra Star 280** (800) 223-0999 *Reader Service No. 730* | $3,299 | 2 color and black | 10MB/32MB | 300 by 600 dpi | 8.5 by 12 inches (perforated letter) | PostScript Level 2 | ★★★★ Good multipurpose thermal-wax printer that handles text and graphics with ease. |
| **Fargo Pictura 310e** (800) 327-4622 *Reader Service No. 731* | $4,995 | 0.25 thermal, 0.09 dye sub | 0MB/0MB (host-based memory) | 300 by 300 dpi | 12 by 20 inches (B/A3 Super Size) | PostScript Level 2 | ★★★ Need dye-sub and thermal-wax output from a single printer? For a low price tag, this one gives you both. |
| **Tektronix Phaser 480X** (800) 835-6100 *Reader Service No. 732* | $19,995 list | 0.31 color and black | 96MB/ 112MB | 300 by 300 dpi | 12.6 by 18.3 inches (tabloid extra) | PostScript Level 2 | ★★★ Hefty price and slow printing, but for dye-sub output you won't find better quality. |

*ESTIMATED STREET PRICE OF TESTED CONFIGURATION UNLESS NOTED OTHERWISE.

★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

**Final Analysis:** Ink Jet, Laser, or Dye Sub?

# Picture-Perfect **Color**

Deciding on a color printer is easy, but choosing the right one isn't. You can spend less than $400 or as much as $20,000. If you need to keep costs down and you don't need portrait-quality output, consider an ink-jet printer. If money is no object, you can spend a lot more and get a lot more: faster speeds and higher-quality output from color lasers or photorealism from a dye-sublimation printer.

Once you purchase a printer, however, you're not done spending money. Maintenance and cost-per-page printing prices sneak up on you. Color laser-printer output costs the least—about 20 cents per page with text and graphics. Ink-jet output is a bit more expensive, and for the best output you need special paper, which is much more expensive than everyday stock. Dye-sublimation printers cost a fortune in output because they require special paper that makes the total average cost about $4 per letter-size page.

If ink-jet technology is sufficient for your requirements, consider Hewlett-Packard's network-ready DeskJet 1600CM or Canon's low-cost BJC-4100. The DeskJet offers stunning output and speeds faster than that of other printers in its price range. Although much slower, the BJC-4100 is very inexpensive. Raid your petty-cash box to buy it and no one will notice.

Tektronix's Phaser 550 gets the nod in the color-laser arena. Its output quality was unmatched by any of its competitors. It's as fast as a monochrome laser, and its price includes network connectivity.

Finally, when only the very best will do for photographic output, look no further than Tektronix's Phaser 480X dye-sub printer. It won't win speed or budget awards, but its dazzling output will impress the most discriminating user. If the budget is tight, consider a thermal-wax printer: General Parametrics' Spectra Star 280 will fill most office needs.

No matter which technology you choose, one thing is certain: When you make the switch to color, your work will be noticed and remembered. That advantage alone may justify the extra cost.

*Lab testing by* SCOTT NAYLOR *and* IBRAHIM GUL.

## DECISION MAKER

CHOOSE THE RIGHT **COLOR PRINTER** FOR YOUR NEEDS

**1** Identify your working environment. **2** Choose the factor that's most important. **3** Choose the next most important factor. **4** For your needs, the best product to buy is . . .

| | | | |
|---|---|---|---|
| SOHO | Performance | Features | Hewlett-Packard DeskJet 1600CM |
| | | Price | Canon BJC-4100 |
| | Image Quality | Features | Hewlett-Packard DeskJet 1600CM |
| | | Price | Tektronix Phaser 140 |
| Corporate Office | Performance | Features | Tektronix Phaser 550 |
| | | Price | Tektronix Phaser 550 |
| | Image Quality | Features | Tektronix Phaser 550 |
| | | Price | Tektronix Phaser 550 |
| Design Studio | Performance | Features | Fargo Pictura 310e |
| | | Price | General Parametrics Spectra Star |
| | Image Quality | Features | Tektronix Phaser 480X |
| | | Price | General Parametrics Spectra Star |

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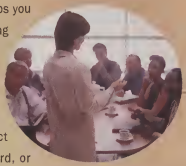

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With Microsoft Project you can display project data in ways that everyone can understand. Great-looking Gantt Charts integrate text, timelines and graphical bars so everyone can see start and finish dates, interdependencies and task assignments. Throughout your project, you can also use a Monthly Calendar report to share your plan in a format that's clear and easy to read. And since Microsoft Project shares many of the same key commands with other Office applications, it will be easy to create schedules and reports. But if at any time you need help, type in a question and the Answer Wizard gives you the information you need. Microsoft Project helps you illustrate every phase of your project so you and your team keep your goals in sight.

**Microsoft**

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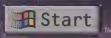
## Keep everyone moving on the same track with open lines of communication.

Microsoft Project is completely integrated with a wide range of e-mail systems* and Schedule+ so that with a single click, changes and additions are immediately distributed to and from teammates. Assignments, task changes, and progress can be communicated and updated without ever reentering information, so you save time and eliminate mistakes. And because Microsoft Project is a member of the Office family, sharing data between programs is easy. For example, you can start building a schedule by simply dragging a task list out of Microsoft Excel and dropping it directly into your Microsoft Project plan. You keep communication clear and information consistent and your project continues to move exactly the way you planned.



## Now you can take full advantage of Windows 95.

Microsoft Project is the world's best selling project management software and now is optimized to work hand-in-hand with the 32-bit performance, advanced multitasking, and simplified user interface of the Windows® 95 operating system. Together, they help open the lines of communication. Together, they help you enhance the way you manage your projects.

# Illustrate Your Point

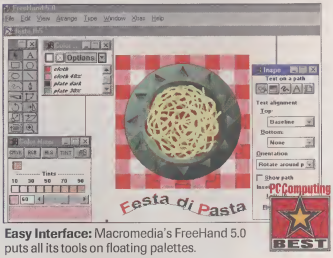
A picture may be worth a thousand words, but in a competitive business environment, that picture could easily be worth a thousand *dollars* as well. That's where illustration software comes in. Even if you use only clip art, chances are you'll still need to fiddle with it—changing colors or modifying an illustration—to make it fit your needs. So what tools do you use?

If performance, features, and professional results are what you're after, the answer is Macromedia's FreeHand 5.0. This 32-bit drawing application—which has versions for Windows 3.*x*, 95, and NT, as well as for the Macintosh—is a long-standing favorite among graphics professionals. FreeHand is remarkably easy to use, even though it offers expert tools (such as editable gradient color blends and built-in trapping controls). For instance, to change an object's color, you need only drag a swatch from the color palette onto the object.

Longtime rival Adobe's Illustrator 4.1 is also a possibility, though it was available only in a 16-bit version at this writing. (Watch for a 32-bit version for Windows 95 and NT to be released soon.) In addition, while Illustrator is still an extremely powerful professional design tool, it's more difficult to master than FreeHand. And unlike its competitors, Illustrator comes with a meager selection of fonts and clip art.

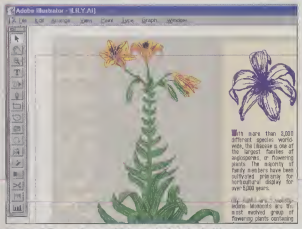
If you're concerned about price and don't care about cross-platform compatibility, Corel's CorelDraw 6 is your answer. (However, if you're still using Windows 3.*x*, you need CorelDraw 5.) Rivaling FreeHand in features and ease of use, CorelDraw 6 offers an incredible number of useful applications in its $450 bundle, including Corel's Photo-Paint 6 (see "Digital Darkrooms," page 130) and separate programs for presentation graphics, 3-D rendering, animation, and font management.

Micrografx also offers a bundled set of products in its ABC Graphics Suite. The set includes Designer 6, a drawing application (no longer sold separately) that offers all the features you need for business graphics. And it's Microsoft Office–compatible, so you can

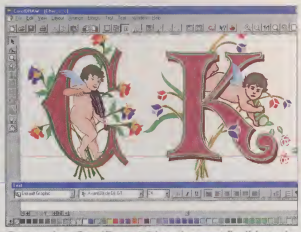



**Easy Interface:** Macromedia's FreeHand 5.0 puts all its tools on floating palettes.

## SIDE BY SIDE FLEXIBLE TOOL PALETTES IMPROVE **USABILITY**



**Buried Functions:** Although Adobe's Illustrator 4.1 offers expert features, you have to dig for them because there are no button bars or optional palettes. Commonly used tools are along the bar on the left.



**Customize:** CorelDraw 6.0 has the most flexible tools of the bunch. You have the choice of tool palettes or button bars, which can be docked along any edge or float freely, as the text palette does here.

# Finally, a multimedia notebook powerful enough to replace your desktop.

# The Millennia TransPort™

**The Millennia TransPort from Micron bridges the performance gap between desktop and notebook computers.** Feature for feature this notebook gives you everything you need—whether you're working on the road or at your desk. Moreover, it bears the Micron name; a name synonymous with award-winning technology and reliability.

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**Modular Bay #1:**

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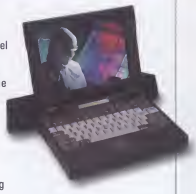
# Desktop Ready!

## Specifications



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- Pick-a-Point™ dual pointing devices integrate both pointing stick and touchpad
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- Parallel, serial, VGA and 2 PS/2 ports
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- Nylon carrying case
- Microsoft® Windows® 95 and MS Plus! Companion
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- 5-year/3-year Micron Power℠ limited warranty*

**Micron Millennia TransPort P133**
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- 2nd intelligent modular lithium-ion battery
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- 11.3" active matrix color display, 800 x 600
- 16MB EDO memory (48MB max.)
- 1.2GB removable hard drive
- 2nd intelligent modular lithium-ion battery

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- 1.2GB removable hard drive

**$4,499** Business lease $153/month

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- 16MB EDO memory (48MB max.)
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**$3,999** Business lease: $136/month

†6.9 lbs. includes 3.5" floppy and one battery

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group your project files in convenient "binders." However, it's not as easy to use as FreeHand or CorelDraw. And a lack of printed documentation makes for a steep learning curve. Micrografx's Picture Publisher 6 (see "Digital Darkrooms," page 130), ABC FlowCharter, and ABC Media Manager round out this suite.

For the home user or casual artist on a budget, Corel's newest product, CorelXara, will do nicely. Licensed from Britain's Xara, this one-time CorelDraw competitor is easy to use and provides most of the major features found in its more expensive rivals. Plus, it adds a few new ones that we hope will turn up in other products soon. For example, you can assign colors and transparency to photographic images just as easily as you can to hand-drawn objects—you aren't forced to master the complex channel and layer methods image editors require. CorelXara also offers zoom levels as high as 25,000 percent and has a stunningly fast screen-redraw rate, so you spend less time waiting for the software to catch up with you.

Another product that lets you work on drawing and bitmap objects in the same application is Deneba's Canvas 5.0. Although there was no stable prerelease version as of this writing, the finished product should be shipping by the time you read this. The version we tested had a useful variety of features, but many of them lacked the depth of similar functions in FreeHand and Illustrator.

**The Business of Art** For graphics professionals and design studios, the choice still boils down to two old rivals: Adobe's Illustrator and Macromedia's FreeHand. These products have defined the digital-illustration market, and both claim a large, dedicated following. Each program offers a distinct style, and most graphic artists strongly prefer one or the other. One important difference for Windows 95 users is that FreeHand 5.0 is 32-bit and Windows 95–compatible. At press time, Adobe had not announced an Illustrator upgrade. So if you haven't made a choice yet and are using Windows 95, we suggest you turn to FreeHand. Rest assured, though, that Illustrator fans who can afford to wait won't suffer. This is a solid, professional product that, despite its sometimes difficult interface, pays off in the long run.

# Top Illustration Applications

| Product | Price* | Platforms Supported | Min. RAM Required | Add-in Support | Import/Export Filters | Images/ Fonts | Verdict |
|---|---|---|---|---|---|---|---|
| PC Computing BEST **Macromedia FreeHand 5.0** (800) 288-4797 *Reader Service No. 734* | $389 | Windows 3.x, 95, NT; Macintosh; Power Mac | 12MB | FreeHand Xtras, Kai's Power Tools | 13/10 | 10,000/ 500 | ★★★★★ A professional 32-bit design tool with a long-standing reputation for high quality. |
| **CorelDraw 6** (800) 772-6735 *Reader Service No. 735* | $450 | Windows 95, NT | 8MB | Adobe plug-ins | 75/27 | 25,000/ 1,000 | ★★★★ A feature-packed 32-bit drawing tool that has tons of extras and is easy to use. Includes Photo-Paint 6. |
| **Adobe Illustrator 4.1** (800) 833-6687 *Reader Service No. 736* | $370 | Windows 3.x, 95, NT; Macintosh; Power Mac | 4MB | KPT Vector Effects | 8/10 | 325/220 | ★★★ A favorite of graphic designers. It provides all the tools an artist needs, but it's due for a 32-bit upgrade. |
| **CorelXara** (800) 772-6735 *Reader Service No. 737* | $199 | Windows 3.x, 95, NT | 8MB | None | 38/15 | 10,500+/ 500 | ★★★ A limited yet interesting drawing tool that works with bitmaps. A great companion to other apps. |
| **Deneba Canvas 5.0** (800) 733-6322 *Reader Service No. 738* | $595 list | Windows 3.x, 95, NT; Macintosh; Power Mac | 8MB | Photoshop-compatible plug-ins | 30/30 | 20,000+/ 2,000+ | ★★★ A 32-bit Windows 95 illustration, image-editing, and page-layout combination. |
| **Micrografx Designer 6**** (800) 676-3110 *Reader Service No. 739* | $299 | Windows 95, NT | 8MB | Adobe plug-ins | 38/25 | 30,000+/ 200+ | ★★★ Has good features but no manual. Part of a suite that is Microsoft Office-compatible. |

*ESTIMATED STREET PRICE UNLESS NOTED OTHERWISE **SOLD ONLY AS PART OF MICROGRAFX'S ABC GRAPHICS SUITE ($299)

★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

# Art That Gets Noticed

An illustration package is an essential component of any graphics toolbox. And if you plan to do original design, you'll want to choose carefully, making sure you find the product that matches your needs and skill level.

Whether for home or business use, Macromedia's FreeHand 5.0 and Corel's CorelDraw 6 offer the most complete sets of features, with the latter including a well-stocked bundle of additional products and an interface that's easier to learn.

If you're operating on a tight budget, you should consider Corel's CorelXara and Micrografx's Designer 6 (sold as a part of Micrografx's ABC Graphics Suite), which offer fewer features for less money. The Micrografx bundle includes Picture Publisher 6 and ABC FlowCharter, but printed documentation is nearly nonexistent, and the program is more difficult to learn.

CorelXara introduces some interesting features to the vector-graphics application category, letting you work as easily with photo images as with line art. If you can afford a few extra dollars, CorelXara is well worth buying as a complement to a more robust application. Deneba's Canvas 5.0 also integrates bitmap images and vector-based line art in a single environment, but the early beta version we worked with had some kinks.

If you're a serious artist or graphic-design professional, you're faced with an age-old choice: Adobe's Illustrator or Macromedia's FreeHand. Both are available for Windows and Macintosh platforms, and both have large, loyal followings. However, the introduction of Windows 95 has changed the landscape a bit. At press time, Adobe still hadn't produced a 32-bit Illustrator upgrade, while FreeHand's Windows 95 upgrade has been available for months. If you haven't yet chosen between these two and want to take advantage of Windows 95's interface enhancements, FreeHand is the clear winner. If you don't need cross-platform support, Windows 95–compliant CorelDraw 6 is a good choice.

If you already have a favorite illustration package, you're better off staying with it than learning something new. It takes a fair amount of effort to master any of these products, so stick with the one that keeps you the most productive.

## DECISION MAKER

CHOOSE THE **ILLUSTRATION SOFTWARE** THAT SUITS YOUR NEEDS

| 1 Choose the factor that's most important. | 2 Choose the next most important factor. | 3 What else is important? | 4 For your needs, the best product to buy is . . . |
|---|---|---|---|
| SOHO | Features | Performance | Macromedia FreeHand 5.0 |
| | | Usability | CorelDraw 6 |
| | Price | Performance | Micrografx Designer 6 |
| | | Usability | CorelXara |
| Corporate Office | Features | Performance | Macromedia FreeHand 5.0 |
| | | Usability | CorelDraw 6 |
| | Price | Performance | Micrografx Designer 6 |
| | | Usability | CorelDraw 6 |
| Design Studio | Features | Performance | Adobe Illustrator 4.1 |
| | | Usability | Adobe Illustrator 4.1 |
| | Price | Performance | Macromedia FreeHand 5.0 |
| | | Usability | Macromedia FreeHand 5.0 |

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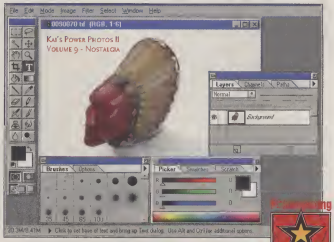
# Digital Darkrooms

Image editors are to pictures what word processors are to text: They let you experiment onscreen before committing your ideas to paper. If your picture doesn't look quite right, adjust it until it does. Need to touch up a flaw or remove an unwanted object? Grab the digital lasso and airbrush, and have at it. Need to combine elements from several photographs? No problem. Layering and feathering tools are at your fingertips. Sophisticated digital artists can even take advantage of expert tools and filters to produce unique, gallery-worthy works of art. Digital editing lets you explore numerous possibilities.

But which of the many image-editing applications should you choose? They all offer the basic tools—such as text overlays and controls for brightness and contrast—and a selection of filters to blur, sharpen, and enhance your images. And they can all import and export your favorite bitmap file formats. But they differ in price and in the precision and complexity of their features. We examined six leading image-editing products to find the best for you, whether you're a professional artist or just starting out.

**Full-Featured** Adobe's Photoshop has long been the favorite of graphics experts. A 16-bit cross-platform powerhouse, it provides everything an artist needs (a 32-bit version is in the works). Photoshop's numerous tools and filters give you precise control over every aspect of the image-editing process. When money is no object, this is the clear choice for any work environment.

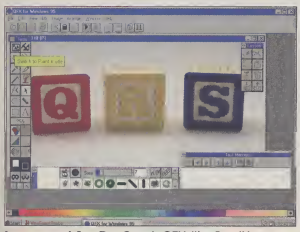



**No Contest:** Adobe's Photoshop is still the most sophisticated image editor you can buy.

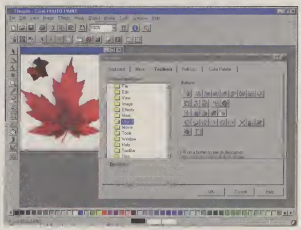
If you can't afford Photoshop's hefty price tag ($549), or if your needs are less demanding, consider Corel's Photo-Paint 6. It offers most of the features found in Photoshop, though many of them lack Photoshop's finesse. Still, Photo-Paint offers the greatest range of features for the lowest price. You can buy it bundled with CorelDraw or separately.

Micrografx's Picture Publisher 6 is also an excellent image editor. No longer available as a stand-alone product, it is now sold only as a part of Micrografx's

## SIDE BY SIDE CUSTOMIZABLE INTERFACES BOOST **USABILITY**



**Images and Art:** Ron Scott's QFX, like CorelXara, combines bitmap and vector tools, letting you edit images or line art. But QFX makes you switch between Paint and Draw modes, unlike CorelXara.



**Flexibility:** Borrowing from its highly successful sibling, CorelDraw, Corel's Photo-Paint lets you customize every aspect of its interface. In this dialog box you can edit menus, toolbars, roll-ups, and more.

ABC Graphics Suite, which sells for $299. That unbeatable price also includes Micrografx Designer, ABC FlowCharter, and ABC Media Manager. All four products offer easy integration with Microsoft's Office, making good use of "binder" compatibility. Unfortunately, there is almost no printed documentation included, so learning Picture Publisher can be a trying experience, especially for graphics novices.

**Specialty Products** Ron Scott's QFX has been around as a DOS program for some time, but it's relatively new to the Windows environment. QFX 5.2 is one of the few image-editing programs that also offers vector drawing tools. Founded on the philosophy that speed is of the essence, this product is for the professional with a tight deadline. But because it departs so dramatically from the paradigm established by market-leader Photoshop, it can be difficult to learn. However, many of those who have made the effort to learn QFX swear by it.

Fractal Design's Painter 4.0 is the best at what it does, but it doesn't compete head-to-head with other products in this category. It's meant to complement, not replace, your primary image editor. Unlike most image editors, it supports only the RGB color model. But because it offers an incredible array of artistic brushes and special effects, Painter 4.0 is just plain fun to work with. You probably won't use it as your only image-editing application, but if you're willing to spend an extra $375, you'll definitely want it in your bag of tricks.

Macromedia's xRes 2.0 takes a unique approach to working with image files. Rather than loading an entire multimegabyte image, it works with a smaller live preview. The result is a dramatic reduction—from minutes to seconds—in the lag between operations. It also handles files larger than 100MB. The trade-off is that when you save your work, all the postponed changes are applied to the larger, original file—a process that can take many minutes (in complex cases, hours). Fortunately, it happens only when you're not working on the image. Like Painter, xRes doesn't support the CMYK color palette favored by some artists. But if you're still using a 33MHz or 50MHz 486, or you need to handle extremely large image files, this product makes a world of difference.

# Top Image-Editing Applications

| Product | Price* | Platforms Supported | Min. RAM Required | Vector Tools | Input/Output Filters | Palette Support | Verdict |
|---|---|---|---|---|---|---|---|
| PC Computing BEST **Adobe Photoshop 3.0.5** (800) 833-6687 *Reader Service No. 740* | $549 | Windows 3.x, 95, NT; Macintosh; Power Mac | 10MB | No | 32/24 | CMYK, HSB, RGB | ★★★★★ The best product for professional results. Expensive but well worth it, though it's not yet 32-bit. |
| **Corel Photo-Paint 6** (800) 772-6735 *Reader Service No. 741* | $199 | Windows 95, NT | 8MB | No | 32/24 | CMYK, HLS, RGB | ★★★★ Delivers the most features for the best price. Has most of Photoshop's features, but lacks its precision. |
| **Micrografx Picture Publisher 6**** (800) 676-3110 *Reader Service No. 742* | $299 | Windows 95, NT | 8MB | Yes | 38/25 | CMYK, HSB, RGB | ★★★★ Solid, but there's no documentation. The ABC Graphics Suite includes illustration and flowcharting tools. |
| **Fractal Design Painter 4.0** (800) 647-7443 *Reader Service No. 743* | $375 | Windows 3.x, 95, NT; Macintosh; Power Mac | 8MB (12MB for Windows 95) | Yes | 12/12 | RGB | ★★★ Not intended as a primary image-editing application, though it makes a good complementary one. |
| **Macromedia xRes 2.0** (800) 288-4797 *Reader Service No. 744* | $489 | Windows 95, NT; Macintosh; Power Mac | 8MB | Yes | 10/12 | HLS, RGB | ★★★ A screaming demon that lets you work on extremely large images at incredible speeds. |
| **Ron Scott's QFX 5.2** (713) 529-5868 *Reader Service No. 745* | $795 list | DOS; Windows 3.x, 95, NT; DEC Alpha | 8MB | Yes | 32/26 | CMYK, HLS, RGB | ★★★ Built for speed and has a good feature set, but it's difficult to learn and the interface is unlike any other. |

*ESTIMATED STREET PRICE UNLESS NOTED OTHERWISE **SOLD ONLY AS PART OF MICROGRAFX'S ABC GRAPHICS SUITE ($299)

★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

**Final Analysis:** The Best Image Editors at Affordable Prices

# Picture-Perfect Results

Trick photography used to be a seldom-used special effect. Now it's such a staple of graphic design that most of us take it for granted. (Did you really think Forrest Gump shook JFK's hand?) But to achieve the kind of digital wizardry that graces the covers, ads, and posters we see daily, you've got to have capable software. Even if your needs are modest, choosing the right tools makes your job a whole lot easier.

For the graphics expert, Adobe's Photoshop offers a powerful array of professional features. It's also available on a wide variety of platforms (though a 32-bit version designed for Windows 95 hasn't been released yet). For those who lack experience, numerous books and training materials provide a wealth of Photoshop tips and techniques. You won't find this kind of support for many other products.

Still, learning to work with an advanced image-editing program might take more time than you have or are willing to spend. It might also require more cash. Corel's Photo-Paint 6 and Micrografx's Picture Publisher 6 both go easy on the budget, but the lack of documentation in Picture Publisher won't exactly ease the learning process. This makes Photo-Paint the best solution for those with little cash or experience.

For those with little time, Ron Scott's QFX 5.2 and Macromedia's xRes 2.0 both offer significant gains in actual processing time. QFX's unorthodox approach, however, is not for the timid and requires an investment in training. xRes, on the other hand, is great if you're stuck with anemic hardware. In fact, if you have graphics files larger than 100MB, it may be the *only* way to go.

Before choosing an image-editing package, consider what you plan to do with it and how much you can spend. If you need to perform only simple tasks, like correcting poor scans or resizing and cropping photos, you don't need to spend a lot; the most basic programs will meet your needs. But if design is your lifeblood, be prepared to spend more for a sophisticated solution.

DAVE HUSS *is the author of several books on image editing. He is also a contributing editor for the* Cobb Newsletter *and other trade publications.*

## DECISION MAKER

CHOOSE THE **IMAGE-EDITING SOFTWARE** THAT SUITS YOUR NEEDS

| 1 Choose the factor that's most important. | 2 Choose the next most important factor. | 3 What else is important? | 4 For your needs, the best product to buy is . . . |
|---|---|---|---|
| SOHO | Features | Performance | Adobe Photoshop 3.0 |
| | | Usability | Corel Photo-Paint 6 |
| | Price | Performance | Micrografx Picture Publisher 6 |
| | | Usability | Corel Photo-Paint 6 |
| Corporate Office | Features | Performance | Adobe Photoshop 3.0 |
| | | Usability | Corel Photo-Paint 6 |
| | Price | Performance | Micrografx Picture Publisher 6 |
| | | Usability | Corel Photo-Paint 6 |
| Design Studio | Features | Performance | Adobe Photoshop 3.0 |
| | | Usability | Adobe Photoshop 3.0 |
| | Price | Performance | Macromedia xRes 2.0 |
| | | Usability | Macromedia xRes 2.0 |

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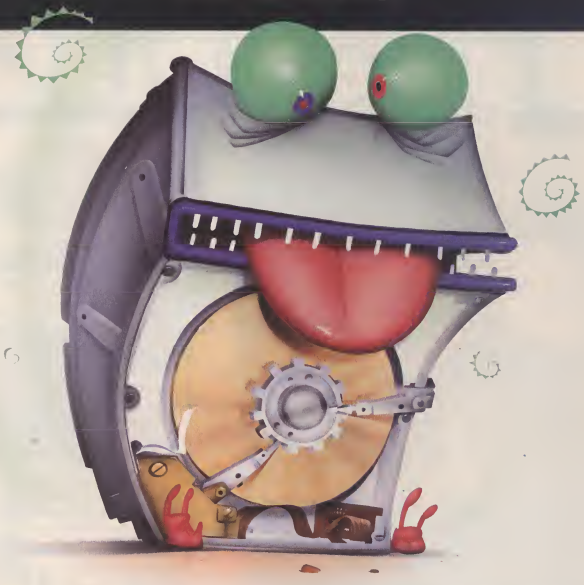

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**Essential Design Tools:** Utilities, Fonts, Clip Art, and Stock Photos

# Finishing Touches

Want a killer Web page? A winning newsletter? A report that rises to the top of the pile? There's more to creating eye-popping graphics than printers, scanners, and design software. You also need some important extras—graphics utilities, fonts, clip art, and stock photos—to add the right finishing touches. We've collected the best of these publishing and graphics essentials in the following pages. For more information on all of these products, visit *PC Computing*'s Web site (www.pccomputing.com).

| Utilities | Price* | Type | Description |
|---|---|---|---|
| **Adobe Acrobat Pro 2.1**<br>(800) 833-6687<br>*Reader Service No. 749* | $459<br>($1,250 for Unix) | Document-sharing (Mac, Windows, and Unix) | Lets you create and distribute electronic documents (PDF format) online, over networks, or on the Web. Converts PostScript to PDF. |
| **Adobe Gallery Effects 1.5.1**<br>(800) 833-6687<br>*Reader Service No. 750* | $149<br>per volume | Photoshop plug-in (Mac and Windows) | Offers three sets of filters (sold separately) for Photoshop and compatible image-editing applications. Filters include Chalk, Neon, Stamp, Glass, and Sponge. |
| **Adobe Streamline 3.0**<br>(800) 833-6687<br>*Reader Service No. 751* | $199 | Tracing tool (Mac and Windows) | Traces bit-mapped outlines to create a scalable vector-based outline of an image that can be edited, filled, and sized in a drawing application. |
| **Adobe Type Manager 3.02**<br>(800) 833-6687<br>*Reader Service No. 752* | $60 | PostScript font manager (Mac and Windows) | Lets you install, manage, or remove PostScript Type 1 screen and printer fonts, including Multiple Masters. Includes 30 Adobe typefaces. |
| **Alien Skin Black Box**<br>(919) 662-4934<br>*Reader Service No. 753* | $99 | Photoshop plug-in (Mac and Windows) | Has ten filters that simplify special effects (such as bevel, cutout, carve, drop shadow, and glow) in Photoshop or other compatible programs. |
| **Ares FontChameleon**<br>(800) 783-2737<br>*Reader Service No. 754* | $179<br>($39 for Starter Kit) | Proprietary font editor (Windows) | Lets you fine-tune font attributes (in a proprietary format), adjust weight and X-height, and blend two faces. |
| **Ares FontFiddler**<br>(800) 783-2737<br>*Reader Service No. 755* | $79 | Font utilities (Windows) | Lets you rename and change font properties, print a sample of a font without installing it, and set kerning-pair information. |
| **Ares FontMinder**<br>(800) 783-2737<br>*Reader Service No. 756* | $59 | Font manager (Windows) | Organizes font packs for easy installation to and removal from Windows. Sorts fonts by properties, families, or styles. |
| **Ares FontMonger**<br>(800) 783-2737<br>*Reader Service No. 757* | $99 | Font-creation and -conversion tool (Mac and Windows) | Offers font-file conversion among TrueType, PostScript, and Nimbus Q formats. Creates and modifies type easily. |

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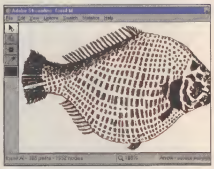
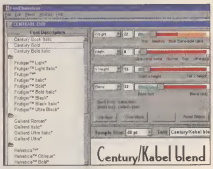
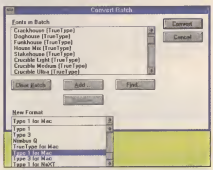


**Photos to Art:** Adobe's Streamline is the best program for turning bit-mapped images into editable line art.




**Create Fonts:** Create new font styles and save them as Type 1 or TrueType with Ares's FontChameleon.




**Font Changer:** Ares's FontMonger converts between font formats, making it ideal for cross-platform shops.

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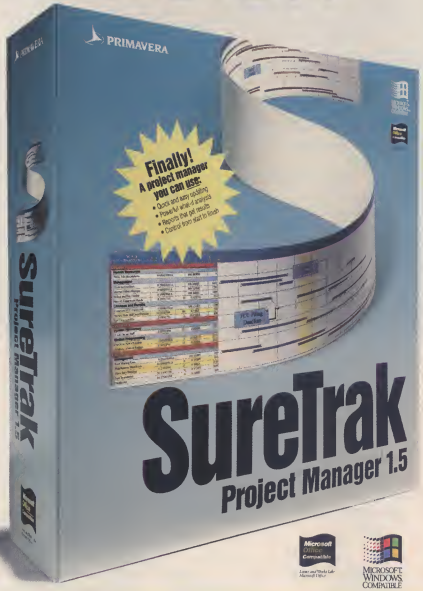


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| Utilities, cont. | Price* | Type | Description |
|---|---|---|---|
| **Asymetrix 3D F/X** (800) 448-6543 *Reader Service No. 758* | $79 | 3-D effects generator (Windows) | Adds 3-D effects to OLE 2.0–compliant Windows documents with drag-and-drop ease. |
| **Auto F/X Photo/ Graphic Edges** (800) 839-2008 *Reader Service No. 759* | $179 per volume | Bitmap effects tool (Mac and Windows) | Three volumes of Photo/Graphic Edges let you add distinctive edges to images. Page/Edges does the same to pages. (Products sold separately.) |
| **Imspace Kudo Image Browser** (800) 488-5836 *Reader Service No. 760* | $110 | Cataloging tool (Windows) | Cataloging, browsing, and retrieval tool for desktop publishers lets you organize images and image collections in 60 formats. |
| **Inner Media Collage Complete** (800) 962-2949 *Reader Service No. 761* | $149 | Screen-capture and image-handling tool (Windows) | Lets you capture, crop, edit, annotate, flip, convert, rotate, and combine images. Supports BMP, GIF, JPEG, Kodak Photo CD, TGA, TIFF, PCX, PICT, WMF, and WPG formats. |
| **JASC Paint Shop Pro 3.1** (800) 622-2793 *Reader Service No. 762* | $69 | Screen capture and image-handling tool (Windows) | A shareware screen-capture, image-editing, and file-conversion tool that supports 20 image formats and offers over 20 image filters and effects. |
| **Macromedia Fontographer 3.5** (800) 945-4061 *Reader Service No. 763* | $289 | Font editor (Mac, NeXT, and Windows) | Creates new fonts or modifies existing ones. Creates lighter or heavier weights, adds fractions or special characters, and blends two faces (Type 1 or TrueType). |
| **MetaTools Kai's Power Tools 3** (805) 566-6200 *Reader Service No. 764* | $129 | Photoshop plug-in (Mac and Windows) | Gradient Designer creates blends of up to 512 colors and 256 opacity levels. Includes Fractal Explorer, Texture Explorer, and Spheroid Designer. |
| **MetaTools KPT Convolver** (805) 566-6200 *Reader Service No. 765* | $129 | Photoshop plug-in (Mac and Windows) | Filter-generating engine lets you combine blurs, embosses, tints, colors, contrasts, and unsharp masking. Includes a random generator. |
| **MetaTools KPT Vector Effects** (805) 566-6200 *Reader Service No. 766* | $129 | FreeHand and Illustrator plug-in (Mac and Windows) | Image-generating engine for vector-based illustration applications lets you map objects to 3-D surfaces and create distortion, shadowing, and twirl effects. |
| **Quarterdeck HiJaak Graphics Suite 95** (800) 354-3222 *Reader Service No. 767* | $149 | File-conversion and image-cataloging tool (Windows 95) | Lets you convert graphic file formats (vector or bitmap) to any other format. Turns Windows 95 bitmap file icons into live image thumbnails. |
| **Ray Dream AddDepth** (800) 848-0111 *Reader Service No. 768* | $49 | 3-D effects generator (Mac and Windows) | Adds point-and-click 3-D effects to text, clip art, and illustrations. Includes 200 pieces of clip art and 30 display fonts. |
| **Ulead Systems ImagePals 2** (800) 858-5323 *Reader Service No. 769* | $199 | Cataloging tool (Mac and Windows) | Reads images in BMP, DCS, EPS, FAX, JPEG, PCD, PCT, PNG, PSD, RAS, SCT, TGA, TIFF, and WMF formats. Includes thumbnail viewer and image editor. |
| **Visual Software Instant 3D** (800) 669-7318 *Reader Service No. 770* | $39 | 3-D effects generator (Windows) | An easy way to apply 3-D effects to words and graphics in any Windows 95 application that supports OLE II. |

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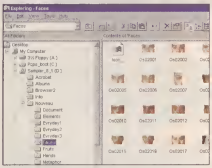
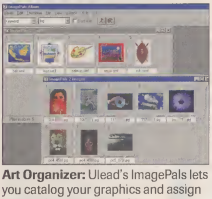
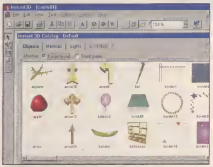
**Textures:** Despite a bizarre interface, Kai's Power Tools lets you apply amazing effects to your photo images.



**Easy View:** Quarterdeck's HiJaak searches your disk and builds image-file thumbnails.



**Art Organizer:** Ulead's ImagePals lets you catalog your graphics and assign keywords to ease searching.



**New Dimension:** Dress up your pages with Visual Software's Instant 3D, a library of three-dimensional objects.

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# Essential Design Tools: Utilities, Fonts, Clip Art, and Stock Photos

| Fonts | Price* | Formats | Description |
|---|---|---|---|
| **Adobe Systems**<br>(800) 833-6687<br>*Reader Service No. 771* | $25 to $275 per set | Type 1 (Mac and Windows) | Over 2,000 fonts. Type On Call provides the entire collection on a locked CD; a phone call and credit card unlock fonts. |
| **AgfaType Collection**<br>(800) 424-8973<br>*Reader Service No. 772* | $24 to $49 per typeface | TrueType, Type 1 (Mac and Windows) | More than 1,300 typefaces, with over 500 exclusive fonts. Over 10,000 logos, symbols, and icons are available. |
| **Alphabets**<br>(800) 326-8973<br>*Reader Service No. 773* | $35 to $109 per typeface | TrueType, Type 1 (Mac and Windows) | More than 100 text and display fonts. One of a handful of foundries offering Multiple Masters (which let you customize stroke, weight, and angle). |
| **Altemus Creative Service Center**<br>(212) 529-7102<br>*Reader Service No. 774* | $39 per font | TrueType, Type 1 (Mac and Windows) | A collection of 26 dingbat fonts, including Bursts, Circles, Spirals, Suns, Stars, Pointers, Rules, Squares, and Shields. All 26 fonts for $780. |
| **Bitstream**<br>(800) 522-3668<br>*Reader Service No. 775* | $20 to $29 per font | TrueType, Type 1 (Mac and Windows) | 1,100 fonts in virtually every style: classic, old style, modern, contemporary, and symbol. TypeShop CD offers 1,085 Type 1 fonts for $695. |
| **Callifonts**<br>(214) 504-8808<br>*Reader Service No. 776* | $99 per font | TrueType, Type 1 (Mac and Windows) | Collection of 75 calligraphy fonts unavailable from any other source. Styles from various countries and centuries. |
| **Castle Systems**<br>(415) 459-6495<br>*Reader Service No. 777* | $30 to $39 per font | TrueType, Type 1 (Mac and Windows) | Over 50 fonts—mostly modern display typefaces. Ornament fonts include Castle Fleurons, Handsome, and Afrika. Two ampersand fonts are also offered. |
| **Christian Schwartz Design**<br>(412) 862-3649<br>*Reader Service No. 778* | $40 per typeface | Type 1 (Mac and Windows) | Seven font families (with one to nine typefaces each). All are original, contemporary designs. Most are best suited for display type. |
| **Deniart Systems**<br>(416) 941-0919<br>*Reader Service No. 779* | $20 to $50 per family | TrueType, Type 1 (Mac and Windows) | Nine families of unique symbol typefaces, including Egyptian Hieroglyphics, Meso Americano, Magick & Mystic, Ancient Writing, and Alchemy Symbols. |
| **DesignPlus**<br>(800) 231-3461<br>*Reader Service No. 780* | $19 to $65 per family | TrueType, Type 1 (Mac and Windows) | 32 modern face and symbol fonts, including Business, Traffic, Sports Figures, Arrows, Ornaments, Movements, Ampersands, and Balloons. |
| **Emigre**<br>(800) 944-9021<br>*Reader Service No. 781* | $59 to $95 per typeface | TrueType, Type 1 (Mac and Windows) | Over 157 original, offbeat typefaces, arranged in 63 families. Emigre fonts are typical of the eclectic style of the '90s. Dingbat fonts include Big Cheese, Fellaparts, and Whirligigs. |
| **The Font Bureau**<br>(617) 423-8770<br>*Reader Service No. 782* | $30 to $40 per font | Type 1 (Mac and Windows) | Over 80 type families in a variety of styles. Faces include Niagara, Talon, and Dizzy (based on Dizzy Gillespie's handwriting). |
| **FontHaus**<br>(800) 942-9110<br>*Reader Service No. 783* | $19 to $59 per typeface | TrueType, Type 1 (Mac and Windows) | Over 20,000 fonts, many on CD-ROM, discounted up to 40 percent. A free catalog is available. |

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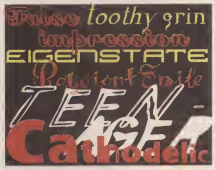
**Real Icons:** Deniart's fonts, like these Meso Americano and Hieroglyphics sets, are historically accurate.

**On the Edge:** Emigre's specialty is offbeat—but nevertheless legible—typeface designs.

**Retro Modern:** FontHaus's collection includes the playful Hairspray fonts from Christian Schwartz Design.




**Offbeat Grunge:** Make your headlines and Web pages stand out with these GarageFonts (page 140).

# Need high performance?

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The difference between professional and amateur equipment is in their levels of performance. Amateur equipment barely gets you through your routine activities. Professional equipment lets you perform at your highest even in the most demanding environments.

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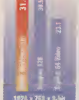
Using dual-ported Window RAM memory and a 220 MHz DAC, MGA Millennium ensures consistent performance in all graphics modes.




You can expect high system performance whether you're working in 800 x 600 in 8-bit color, or 1600 x 1200 in 24-bit color mode.

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[1] Estimated street/selling price of the 2 MB version – Free CD-ROM available in retail packaging only. Windows 95 tests conducted by Matrox Graphics Inc. using QF Zone. Windows 95 on a Gateway P5 133 MHz system with 256k cache. 16M EDO RAM at 1024 x 768 in 256 colors 72 Hz large fonts. The Matrox MGA Millennium and Diamond Stealth 64 Video were configured with 2 MB of memory, and the Number Nine Imagine 128 were configured with 4 MB of memory, for the PCI bus wing driver releases 2.29.41 and 1.04 respectively.

1-800-583-4353 http://www.matrox.com/mga/

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| Fonts, cont. | Price* | Formats | Description |
|---|---|---|---|
| **GarageFonts** (619) 755-4761 *Reader Service No. 784* | $35 to $75 per typeface | TrueType, Type 1 (Mac and Windows) | Over 50 original and unconventional families, designed for headline and display use. Fonts sold only in families. |
| **House Industries** (800) 888-4390 *Reader Service No. 785* | $50 per font | TrueType, Type 1 (Mac and Windows) | 70 unique, hand-lettered typefaces. This is cutting-edge typography that epitomizes the grunge style of the '90s. |
| **Image Club Graphics** (800) 661-9410 *Reader Service No. 786* | $19 to $150 per typeface | TrueType, Type 1 (Mac and Windows) | Over 800 fonts, including Image Club originals, plus typefaces from other type foundries. A range of classical, modern, and contemporary styles. |
| **International Typeface (ITC)** (800) 425-3882 *Reader Service No. 787* | $29 to $39 per font | TrueType GX (Mac); Type 1 (Mac and Windows) | Original fonts as well as fonts from other foundries. Over 200 families and 1,000 typefaces. ITC also sells to subscribers for retail distribution. |
| **Letraset USA** (800) 343-8973 *Reader Service No. 788* | $30 to $40 per font | TrueType, Type 1 (Mac and Windows) | Over 275 contemporary fonts, including many playful designs and elegant script typefaces. DesignFonts consists of 23 dingbat fonts. |
| **Linguist's Software** (800) 563-6687 *Reader Service No. 789* | $100 to $250 per typeface | TrueType, Type 1 (Mac and Windows) | The largest selection of foreign alphabets with over 270 typefaces, including Cherokee, Farsi, Gaelic, Hebrew, Korean, Punjabi, and Sanskrit. |
| **Linotype-Hell** (800) 799-4922 *Reader Service No. 790* | $20 to $25 per font | TrueType, Type 1 (Mac and Windows); F3 (Unix) | Over 2,000 fonts (1,700 in PostScript) in a wide range of classical and modern styles. More TrueType fonts will be available soon. |
| **Monotype Typography** (800) 666-6897 *Reader Service No. 791* | $25 to $195 per font package | TrueType, Type 1 (Mac and Windows) | A range of typefaces from a variety of sources, including original designs. Over 4,000 (Type 1 only) are available on two CDs. Free catalog available. |
| **Nimx** (800) 688-6469 *Reader Service No. 792* | $20 to $85 per typeface | TrueType, Type 1 (Mac and Windows) | A variety of typefaces comprise 12 families. Jacoby is available in Adobe Multiple Master format, letting you adjust weight and width. |
| **Plazm Media** (503) 222-6389 *Reader Service No. 793* | $30 to $60 per typeface | TrueType, Type 1 (Mac and Windows) | Nearly 100 eclectic, contemporary fonts designed by independent graphic artists for text and display purposes. The entire library costs $2,750. |
| **PolyType** (800) 998-9934 *Reader Service No. 794* | $40 per typeface | TrueType, Type 1 (Mac and Windows) | Approximately 100 fonts arranged in 50 families with several original designs. The Art Collection features 12 categories of ornaments. |
| **Precision Type** (800) 248-3668 *Reader Service No. 795* | $19 to $49 per font | TrueType, Type 1 (Mac and Windows) | A virtual megamall of type, offering more than 13,000 fonts from over 60 designers and foundries. A 700-page catalog costs $39.95. |
| **Psy/Ops Type Foundry** (415) 285-8820 *Reader Service No. 796* | $35 to $105 per family | TrueType, Type 1 (Mac and Windows) | Contemporary, cutting-edge typography. Most faces are best suited for display type. Twelve families (with one to six typefaces each) are available. |

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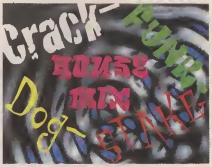
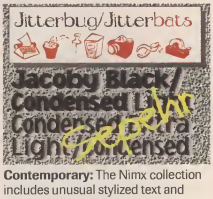



**In Da House:** Crackhouse, Doghouse, Funkhouse, and Stakehouse are just a few faces in the House Industries mix.

**Folk Art:** Image Club offers numerous fonts from a variety of sources, including Fajita and the MiniPix sets.




**Contemporary:** The Nimx collection includes unusual stylized text and numerous icon fonts.

**Easy to Read:** PolyType's playful yet legible faces will get you noticed without resorting to grunge type.

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Designed for Microsoft® Windows® 95

| Fonts, cont. | Price* | Formats | Description |
|---|---|---|---|
| **Stone Type Foundry** (800) 557-8663 *Reader Service No. 797* | $69 to $149 per set | Type 1 (Mac and Windows) | Over 80 mostly traditional fonts, all designed by renowned typographer Sumner Stone. |
| **T-26** (312) 787-8973 *Reader Service No. 798* | $29 to $69 per font | TrueType, Type 1 (Mac and Windows) | Over 200 original, unconventional fonts; classic examples of '90s grunge typography. A 40 percent student discount is available. |
| **Treacyfaces/Headliners** (800) 800-6805 *Reader Service No. 799* | $29 to $185 per set | TrueType, Type 1 (Mac and Windows) | Over 350 typefaces, with three to seven weights per family. Discounts are offered for orders placed on CompuServe (Go DTPONL). |
| **URW America** (800) 229-8791 *Reader Service No. 800* | $25 to $49 per font | TrueType, Type 1 (Mac and Windows) | The TypeWorks CD ($979 unlocked) has 3,000 fonts, with variations on 500 designs. The DeSign Collection ($1,399) has 870 Type 1 display faces. |
| **Clip Art** | | | |
| **Aridi Computer Graphics** (800) 755-6441 *Reader Service No. 801* | $99 to $199 per volume | AI, BMP, EPS, PICT (Mac and Windows) | Nine volumes of colorful initial caps, ornaments, borders, and patterns include Olde World Borders, Historic Ornaments, and Calligraphia. |
| **Artbeats** (800) 444-9392 *Reader Service No. 802* | $49 to $239 per collection | BMP, EPS, PIC, TIFF (Mac and Windows) | Ten collections, consisting of four CDs of 400-dpi images and 3,000 design elements, including Web-page icons, tiles, patterns, and buttons. |
| **Cartesia MapArt** (800) 334-4291 *Reader Service No. 803* | $129 to $399 per set | AI, CDR (Mac and Windows) | Designer Series offers fully editable color maps with zip codes and congressional districts; Cartographic Databank provides intricate detail. |
| **Corel Gallery 2** (800) 772-6735 *Reader Service No. 804* | $69 | BMP, CDR, CMX, CPT, PCX, TIFF (Windows) | A collection of 15,000 clip-art images (not sold separately), plus 500 royalty-free photos and 500 fonts with an OLE 2.0-compatible visual file manager. |
| **DesignPlus** (800) 231-3461 *Reader Service No. 805* | $35 to $90 per collection | EPS (Mac and Windows) | Eight collections of initial caps, patterns, and symbols. Intaglios has Spirograph-like patterns; Stencils has 150 borders. |
| **Image Club DigitArt Clip Art** (800) 661-9410 *Reader Service No. 806* | $69 to $99 per volume | EPS (Mac and Windows) | A variety of clip-art styles in 41 volumes. Most are black-and-white, with a few grayscale and color volumes. |
| **Letraset Decorative Initials** (800) 343-8973 *Reader Service No. 807* | $40 per set | EPS (Mac and Windows) | Two sets of decorative initial caps, including all the letters of the alphabet. Each set contains two styles. |
| **Letraset Textures & Tones** (800) 343-8973 *Reader Service No. 808* | $59 per collection | TIFF (Mac and Windows) | Six collections (Textiles, Tiles, Fibers, Screens, Grains & Sands, and Waves & Circles) of 25 black-and-white images on CD. Entire set costs $349. |
| **Letraset Tone Types** (800) 343-8973 *Reader Service No. 809* | $40 per set | EPS (Mac and Windows) | Two sets of shaded initial caps (plus 33 extended characters). Each contains two styles, including neon, chiseled, and beveled designs. |

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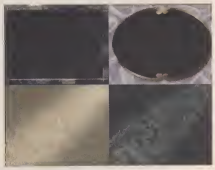
**Something Different:** Psy/Ops (page 140) produces high-quality, attention-getting type with just the right edge.

**Opulence:** Aridi Computer Graphics offers ornately elegant borders, initial caps, and other eye-catching devices.



**Fancy Paper:** You can simulate specialty papers as needed with these high-res Artbeats backgrounds.

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# Essential Design Tools: Utilities, Fonts, Clip Art, and Stock Photos

| Clip Art, cont. | Price* | Formats | Description |
|---|---|---|---|
| **Master Series I Illustration Library** (800) 641-1803 *Reader Service No. 810* | $349 per volume | JPEG, TIFF (Mac and Windows) | Six volumes; each contains 60 royalty-free images. All are unique, full-color illustrations. Titles include Business & Technology and Items & Objects. |
| **Nova Development Art Explosion 40,000** (800) 395-6682 *Reader Service No. 811* | $49 | EPS (Mac); WMF (Windows) | A collection of 40,000 images—most in color—including 5,000 photos and 1,200 fonts, in over 300 categories. A built-in browser is included as well. |
| **Ultimate Symbol Design Elements** (800) 611-4761 *Reader Service No. 812* | $499 | EPS, PDF, WMF (Mac and Windows) | A collection of 3,200 symbols, icons, and dingbats on CD or SyQuest cartridge. Includes Adobe's Acrobat Reader and a thumbnail catalog. |
| **Visual Software Textures for Professionals** (800) 669-7318 *Reader Service No. 813* | $149 | TGA (Windows); TIFF (Mac) | A collection of 480 seamless, high-quality textures, including fabrics, stone, wallpapers, clouds, trees, water—even petunias and alligator skin. |
| **Zedcor DeskGallery** (800) 482-4567 *Reader Service No. 814* | $149 | EPS, PICT, TIFF WMF (Mac and Windows) | The world's largest collection of clip-art images (120,000), on 15 CDs. Categories include Advertising Art. |
| **Stock Photos** | | | |
| **Classic PIO Partners** (800) 370-2746 *Reader Service No. 815* | $69 per set | TIFF (Mac and Windows) | Four sets of background-free clip photos feature one-of-a-kind antique objects. Titles are Classic Radios, Classic Telephones, and Classic Memorabilia. A sampler costs $49. |
| **Corel Professional Photos** (800) 772-6735 *Reader Service No. 816* | $18 per CD | PCD (Mac and Windows) | 600 CDs, each with 100 high-resolution, royalty-free images. Two Photo Libraries (20,000 images each) are available for $699 each. Titles range from Airshows to People to Zimbabwe. |
| **Digital Stock** (800) 545-4514 *Reader Service No. 817* | $249 per CD | JPEG, PCD (Mac and Windows) | Over 30 CD titles each contain 100 images. Themes include Food and Western Scenics. Starter disc and catalog cost $20. |
| **Image Club PhotoGear** (800) 661-9410 *Reader Service No. 818* | $69 per volume | TIFF (Mac and Windows) | Nine volumes of backgrounds in three resolutions. Titles include Backgrounds and Textures and Images of Business. |
| **Letraset Phototone** (800) 526-9073 *Reader Service No. 819* | $199 per category | TIFF (Mac) | Ten categories—over 1,000 images—of photographic textures, including Paper/Textiles, Abstract, and Extra. |
| **MetaTools KPT Power Photos** (805) 566-6200 *Reader Service No. 820* | $129 per series | TIFF (Mac and Windows) | Three series, each composed of five volumes of custom images. Titles include Kids Toys, Food Basics, Backgrounds and Textures, and Nostalgia. |
| **PhotoDisc** (800) 528-3472 *Reader Service No. 821* | $149 to $299 per CD | TIFF, PCD (Mac and Windows) | Collection of 54 CDs, 100 to 400 images each, including Object Series, Signature Series, and Fine Art Series. |
| **PhotoSphere Software** (800) 665-1496 *Reader Service No. 822* | $250 per collection | PCD (Mac and Windows) | Each collection has 100 images. Includes Backgrounds & Textures, Maps & Globes. A $25 Preview Pack is available. |

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# Screaming-Fast Video

What are you, crazy? Spend $450 or more on a graphics board when you already have one in your system? The simple answer is yes, because optimum video performance is rarely a standard feature of today's PCs. Whether you want to kick your current system's performance up a notch or optimize a new system, you need a fast graphics card. It's the most effective way to speed overall system performance.

**Give your system a shot of pure adrenaline with the best Windows accelerators**

Most of today's Pentium systems offer passable graphics performance, but few include top-drawer Windows accelerators. Simple economics is to blame. Keeping system prices down often means forgoing cards with goodies like extra video RAM or the latest accelerator chips.

Even the best video cards, however, get a bad rap. Many people view them in the

BY CHRIS O'MALLEY

same light they once held 17-inch monitors—great tools for graphics professionals, but not something the everyday user is likely to need. Anyone who runs Windows 95 knows the folly of such thinking. Windows 95 is a performance sponge: It quickly soaks up all the resources you pour into it—especially graphics speed.

We rounded up five of the fastest graphics cards available and put them to the test in *PC Computing*'s Labs. The computer of choice these days is a Pentium system with a PCI bus running Windows 95, so we picked PCI cards with Plug and Play installation and 64-bit or better graphics-accelerator chips.

These graphics cards push around plenty of pixels. All five boards in our roundup displayed vivid, photolike images in 16.7 million colors at resolutions of up to 1,280 by 1,024 pixels. In 65,000 colors, all five offered resolutions of up to 1,600 by 1,200.

Today's graphics cards can more than adequately handle an onslaught of colors and pixels by beefing up the two principal weapons in their display arsenals: accelerator chip and memory. Four of the five cards in this group use 64-bit accelerators; the fifth boasts a 128-bit accelerator. We tested each with 4MB of memory, whether classified as video RAM (VRAM) or Window RAM (WRAM). Many video boards are available with only 2MB of RAM, but 4MB is quickly becoming the standard for accelerator cards.

The performance winner was fairly predictable. Number Nine's Imagine 128 was the only card to use a 128-bit accelerator chip, and it clearly—though not overwhelmingly—outpaced the other four boards in our WinBench 96 Graphics Winmark test, a direct measure of graphics application speed under Windows 95. But Matrox's 64-bit MGA Millennium wasn't far behind—partly due to its use of WRAM, a form of VRAM that does faster fills and accelerates video playback and animation. Diamond's Stealth64 Video 3400XL was only a few ticks behind, while both Hercules's Terminator Professional and ATI's Graphics Pro Turbo made respectable showings.

The raw graphics-efficiency numbers were reflected in our WinStone 96 gauge of real-world applications performance. The Imagine 128 again led the field, zipping through the scripted exercises of our baker's dozen of best-selling Windows 95 programs. Matrox's MGA Millennium and Diamond's Stealth64 Video came in a close second and third place, respectively. (Diamond is working on a major driver upgrade that will improve performance dramatically.)

**Two Great Choices:** Number Nine's $699 Imagine 128 (left) offers unbeatable 128-bit performance; Matrox's $489 MGA Millennium adds real-time 3-D acceleration.

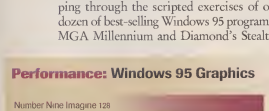
Speed may be your main consideration, but it's not everything. If you intend to play CD-ROMs endowed with MPEG video, for example, it's worth noting that all but the Imagine 128 include software-based MPEG players. The MGA Millennium and Stealth64 can be fitted with MPEG hardware upgrades to improve playback performance. The MGA Millennium also rides the cutting edge of the wave with its accelerated 3-D rendering, supporting 3-D standards developed by Microsoft, Intel, and others (see "Windows Accelerators Gain Real-Time 3-D Graphics," page 149).

Usability was not a major problem with any of the cards, thanks to their support of Plug and Play. All were easy to install and set up under Windows 95. All five also offer useful display utilities for setting display resolution and color depth, panning, and zooming, as well as a variety of monitor-adjustment options and status indicators. The Imagine 128's HawkEye utilities are the best in this impressive lot.

It's a clear sign of better times that there are few notable drawbacks among these cards. In terms of performance, only the Graphics Pro Turbo didn't meet our expectations—it uses an older chip and design that were due to be updated as we prepared this report. We could also complain about the street prices that range from $429 to $699, especially since they've not fallen much in the past year or so. But with the amount of bang for your buck still on the upswing, it's hard to be indignant—for now.

PHOTOGRAPH BY GRAMFORD BENVENUTI

**Performance:** Windows 95 Graphics




NOTE: THE GRAPHICS WINMARK MEASURES VIDEO PERFORMANCE UNDER WINDOWS 95.

# Top Five Ultrafast Graphics Accelerators

| Product | Price* | Chip Set | RAM | Resolution/ Refresh Rate | Video Features | Other Features | Verdict |
|---|---|---|---|---|---|---|---|
| PC Computing BEST **Matrox MGA Millennium** (800) 361-1408 *Reader Service No. 830* | $489 | MGA 2064W | 4MB of WRAM | 1,024 by 768/120Hz; 1,280 by 1,024/110Hz; 1,600 by 1,200/78Hz | Software MPEG upgradable to hardware | Real-time 3-D acceleration, bundled with NASCAR Racing | ★★★★★ The best balance of speed and value. |
| PC Computing BEST **Number Nine Imagine 128** (800) 438-6463 *Reader Service No. 831* | $689 | Imagine 128 | 4MB of VRAM, upgradable to 8MB | 1,024 by 768/150Hz; 1,280 by 1,024/100Hz; 1,600 by 1,200/78Hz | None | 128-bit processor, HawkEye utilities | ★★★★★ The barn burner of the group. |
| **Diamond Stealth64 Video 3400XL** (800) 468-5463 *Reader Service No. 832* | $500 | S3 Vision 968 | 4MB of VRAM | 1,024 by 768/100Hz; 1,280 by 1,024/75Hz; 1,600 by 1,200/76Hz | Software MPEG upgradable to hardware | Bundled with CorelDraw 4 and Asymetrix 3D FX | ★★★★ Excellent performance, great value. |
| **Hercules Terminator Professional** (800) 532-0600 *Reader Service No. 834* | $449 | S3 Vision 968 | 4MB of VRAM | 1,024 by 768/90Hz; 1,280 by 1,024/100Hz; 1,600 by 1,200/76Hz | Software MPEG | Hercules Touch utilities | ★★★ A notch behind the field. |
| **ATI Graphics Pro Turbo** (905) 882-2600 *Reader Service No. 833* | $429 | ATI mach64 | 4MB of VRAM | 1,024 by 768/100Hz; 1,280 by 1,024/75Hz; 1,600 by 1,200/75Hz | Software MPEG | DirectDraw drivers, color-correction utility | ★★ Wait and look for the new and improved model. |

*ESTIMATED STREET PRICE.

★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

## A NEW DIMENSION

WINDOWS ACCELERATORS GAIN REAL-TIME **3-D GRAPHICS**

Accelerated graphics cards are about to enter the Twilight Zone—well, another dimension anyway. A new wave of 3-D graphics cards uses sophisticated rendering techniques to add depth to the flat, two-dimensional graphics we're accustomed to seeing.

Most of these 3-D cards use some combination of texture mapping and shading techniques to turn ordinary static or animated images into lifelike pictures. These enhancements usually take place in real time, but only with software and hardware that subscribe to one of the emerging 3-D application programming interfaces (APIs). These include Microsoft's Reality Lab specifications and Direct3D; the OpenGL standard pioneered by Silicon Graphics; and Intel's 3DR.

Matrox's MGA Millennium is the only video card in this roundup with specific features for 3-D graphics. It includes support for the most popular APIs, as well as a special driver for AutoCAD. But several other cards in this group will soon add 3-D support. Number Nine, for example, plans to offer a 3-D version of its card called the Imagine 128 Series 2. Diamond already sells a separate 3-D card called Diamond Edge 3D, while Creative Labs recently threw its 3D Blaster into the ring.

Chip makers such as ATI, S3, and Cirrus Logic are all working on 3-D accelerators. So are a number of upstart chip makers, including Brooktree and nVidia.

Should you care about 3-D now? Games that take advantage of the new 3-D gear can easily surpass 2-D video games in realistic-looking action, and even rival some of the better arcade simulations. 3-D is the logical evolution for high-end drawing, modeling, and designing.

In the longer haul, 3-D graphics might also radically transform the netherworld interfaces of operating systems such as Windows and OS/2 into something that resembles the real world. Then we'll all care.

ARTWORK COURTESY OF LIWEI HUANG

# True-Color Speed

On the surface, choosing the right graphics card seems easy: Just buy the one with the fastest benchmark times. Given that the overall image quality displayed by each of the five boards we tested was quite good, that's certainly one way to go. But if factors like price and motion-video playback are also important considerations for you, then it might be somewhat harder to reach a decision.

Let's start with the easy route. If you want top-notch Windows performance—whether for running everyday business applications, graphics-intensive publishing, or CAD projects—go with Number Nine's Imagine 128. Its fast, 128-bit acceleration is a V-8 in a class of V-6 engines, albeit refined ones.

Of course, raw performance is rarely the only criterion. There's also price to consider. The Imagine 128 will set you back nearly $700, compared with less than $500 for most of the other boards. That's understandable, perhaps, but we nonetheless get a different result when we add price and performance into the equation. Penny for pixel, Matrox's MGA Millennium—which finished a close second in performance—comes out the champ. It's the best of all the 64-bit contenders, and at $489, it delivers better performance for your dollar than the Imagine 128. We were also impressed by the MGA Millennium's support for 3-D graphics and MPEG, with the latter taking the form of either an included software player or a hardware upgrade. Indeed, if either 3-D or MPEG video playback intrigue you, consider buying the MGA Millennium.

You don't necessarily need 3-D or MPEG to create lifelike graphics or play video, and many 3-D– and MPEG-equipped boards don't yet match the acceleration of the five graphics cards in our roundup. But if you want it all, your best bet is Matrox's MGA Millennium.

---

CHRIS O'MALLEY *is a freelance writer who specializes in video and telecommunications.*
*Lab testing was performed by* IBRAHIM GUL *and* DAISY ZHAO.

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|---|---|---|---|
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| | | Video Playback | Matrox MGA Millennium |
| | Image Quality | Graphics | Number Nine Imagine 128 |
| | | Video Playback | Number Nine Imagine 128 |
| Price | Performance | Graphics | Matrox MGA Millennium |
| | | Video Playback | Matrox MGA Millennium |
| | Image Quality | Graphics | Matrox MGA Millennium |
| | | Video Playback | Matrox MGA Millennium |
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| | | Video Playback | Number Nine Imagine 128 |
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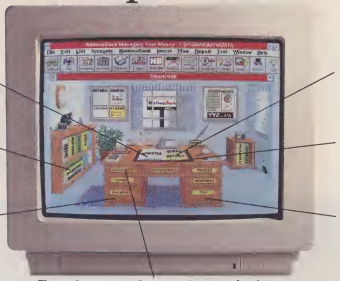

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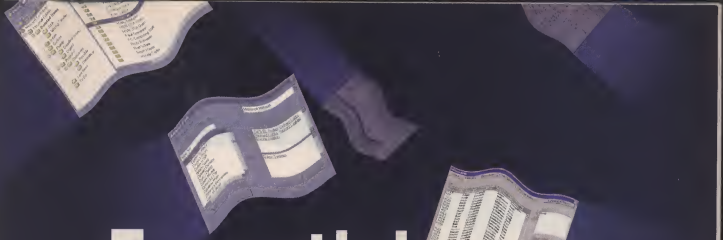


# Essential E-mail

## Find the right way to keep your company posted

**SYNOPSIS**


**THE BIG THREE:** *We review the top e-mail programs—Microsoft's Exchange, Lotus's Notes Mail, and Novell's GroupWise.* **154**

**PRODUCTIVITY CHAMP:** *The easiest e-mail package is built into Windows 95.* **156**

**E-MAIL ALTERNATIVES:** *Find out which is best for your business—a dedicated e-mail program, commercial online service, Web browser, groupware, peer-to-peer system, or free electronic network.* **160**


Imagine running a business without a telephone. That would be just as hard as working without electricity. In today's corporate environment, e-mail is just as vital. Even the U.S. Postal Service is working on an e-mail project.

But how much e-mail does your company really need? To help you decide, we ran the three most powerful packages—Microsoft's Exchange, Lotus's Notes Mail, and Novell's GroupWise—through *PC Computing*'s Usability Labs. Then for basic e-mail needs, we considered other communication options, including online services, peer-to-peer packages, and free e-mail networks.

BY JACK LYON

**Reviews:** Microsoft Exchange, Lotus Notes Mail, Novell GroupWise

# Powerful Tools for

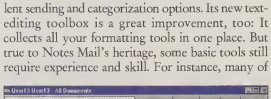
In the corporate world, paper memos are showing signs of age. If you're doing the print-it-then-fax-it two-step, you're stuck in the Dark Ages. E-mail is now the communication method of choice. How else can you route a message around the world in less than five minutes or follow a discussion thread with multiple parties on an important topic?

To see how effectively e-mail systems work in a typical office environment, we compared the features of Microsoft's Exchange, Lotus's Notes Mail, and Novell's GroupWise 4.1 to see which one offers the richest set of options. In addition, we had our Usability Labs test the programs' overall ease of use. (See "Productivity Report Card," page 156.)

**Great Creations** Creating and composing an e-mail message can be a monotonous task, so time-saving tools are essential to any e-mail package. Microsoft's Exchange offers the best bag of tricks, with onscreen text-editing tools and time-savers like address autofill, which automatically completes the remainder of an address that Exchange recognizes from its address book. (All three packages contained address books.)

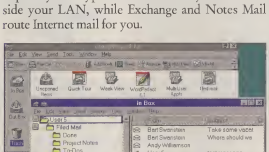
One serious flaw we found in Exchange's address book is that there's no simple way to import data from another source. This is an annoying oversight considering that many people already have hundreds of e-mail addresses entered in their personal information manager or contact manager. Exchange also lacks a built-in spell-checker, so you have to use the one in Microsoft's Office.

The vastly improved interface of Lotus's Notes Mail makes it easy to create an e-mail message with features like automatic address-correction and excellent sending and categorization options. Its new text-editing toolbox is a great improvement, too: It collects all your formatting tools in one place. But true to Notes Mail's heritage, some basic tools still require experience and skill. For instance, many of our usability testers found it difficult to figure out how to automatically reply to all recipients.



**Lotus Notes Mail:** It offers the greatest power, but even with its new and improved interface, Notes Mail poses many usability problems.

Novell's GroupWise also has timesaving tools for composing e-mail messages, including text-formatting buttons right in the e-mail window and a fine spell-checker. In fact, its interface is very clean overall, but there are some minor glitches. For example, GroupWise doesn't give you a verification notice for sending mail, so when you click on Send you're not sure if anything happened. Also, GroupWise requires you to type *Internet* before any address outside your LAN, while Exchange and Notes Mail route Internet mail for you.



**Novell GroupWise 4.1:** Although GroupWise is not the easiest to use, it stands apart with unique add-on functions like text-to-speech.

**Ordering Your E-mail World** To make sense of the mass of e-mail you receive every day, you need to organize, archive, and find features as easily as possible. Exchange doesn't offer as many organizational tools as the other two programs, but it has the e-mail essentials and is easy to use. Exchange's Find tool will look familiar to users of Microsoft's Office, and Exchange supports Windows 95 features like drag and drop and right-mouse-button menu options. However, Exchange's lack of rules-based mail, like automatically replying or forwarding messages when you're on vacation, is a big shortcoming.

Notes Mail's agents, which let you automate mundane tasks like archiving and adding new addresses, are handy. But if you have specific tasks you'd like to program that Notes Mail doesn't offer, you're stuck: Creating your own agents requires some programming expertise.

On the positive side, a new bookmark feature in Notes Mail lets you link one e-mail message to another. This is handy for keeping your train of thought on a topic. In addition, the success of Notes Mail has inspired a raft of add-on tools for more-sophisticated abilities like Web publishing and videoconferencing. But harnessing

# Corporate E-mail

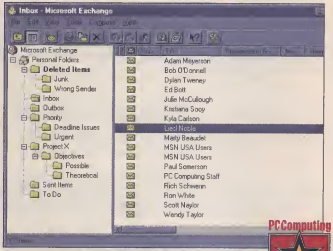
some of the power in Notes Mail can be painful at best, even at the most basic levels. For instance, our usability testers were confused by the Find and Search functions. Although they fundamentally do the same thing, the Find function shows matches one at a time, while Search acts as a filter, listing all the e-mail messages that match your query.

GroupWise has an impressive arsenal of functions to help you sort your in-box. GroupWise also makes organizing messages a simple task with big buttons for routing, forwarding, and opening consecutive messages. Finding a specific message in GroupWise, however, is difficult. The program lets you search only for text; you can't sort messages by priority level as you can in Notes Mail and Exchange. Both GroupWise and Notes Mail let you archive old e-mail to save space.

**Phone Home** For the laptop brigade, all three products have unique remote-access abilities. Exchange has an easy method for picking exactly which messages you want to read. When Exchange first logs on, it downloads an abbreviated listing of your new mail, including information on the sender, the subject, and the size of the message. You then simply select the messages you want to download, thereby saving time and money.

In contrast, the remote functions in Notes Mail are difficult to set up. For instance, to choose what message you want to update or send, you must enter a complex formula to customize your remote-mail settings.

For the ultimate in remote access, nothing can touch GroupWise. In addition to call-in e-mail replication,




**Microsoft Exchange:** Windows 95 integration, solid usability, and affordable price—it's a winner!

PCComputing BEST

GroupWise offers several unique ways to get your messages, including a text-to-speech add-on in which you call a number and have your e-mail read to you by a speech-synthesis engine on your server.

The dedicated e-mail packages reviewed here are quickly evolving to handle almost any sophisticated communication need. But since e-mail is an application you'll use a lot, take into account the results outlined in our "Productivity Report Card" before deciding which product is best for you.

## Top E-mail Packages

| Product | Price* | Minimum Client Config. | Operating Systems Supported | Built-In Spell-Checker | Rules-Based Mail | Archivable | Unique Features | Verdict |
|---|---|---|---|---|---|---|---|---|
| PCComputing BEST **Microsoft Exchange** (800) 426-9400 *Reader Service No. 836* | $399 for server, free client** | 486 processor, 2MB of RAM, 6MB of hard disk space | Windows 3.1, 95, NT; DOS; Macintosh | No | No | No | Windows 95/ Microsoft's Office integration | ★★★★ Despite lacking a few features like rules-based mail, it's by far the easiest app to use. |
| **Lotus Notes Mail** (800) 346-1305 *Reader Service No. 837* | $495 for server, $85 per client | 386 processor, 8MB of RAM, 40MB of hard disk space | Windows 3.1, 95, NT; OS/2; Unix; Macintosh | Yes | Yes | Yes | Open architecture and plenty of add-ons | ★★★ It's the package for information sharing, but the interface still needs work. |
| **Novell GroupWise 4.1** (800) 453-1267 *Reader Service No. 838* | $446 for server, $122 per client | 386 processor, 6MB of RAM, 6MB of hard disk space | Windows 3.1, 95, NT; DOS; Unix; Macintosh | Yes | Yes | Yes | Call-in fax/e-mail handling | ★★★ Outstanding communication and organization features, but hard to use. |

*ESTIMATED STREET PRICE. **MICROSOFT'S INBOX IS FREE WITH WINDOWS 95

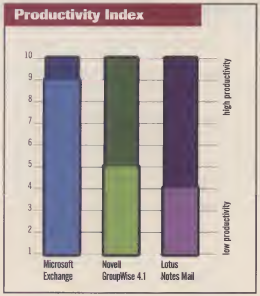
★★★★★ *Excellent* ★★★★ *Good* ★★★ *Acceptable* ★★ *Poor* ★ *Unacceptable*

## Productivity Report Card

# Microsoft Exchange:

Although e-mail is faster and more convenient than postal mail, it still isn't as easy as licking a stamp. It is, however, far more powerful. From sending a simple note to a coworker down the hall to message-threading and spell-checking, today's e-mail packages offer a tremendous amount of features. But how easy is it to put them to work?

To find out, *PC Computing*'s Usability Labs brought in testers with all levels of e-mail experience, and asked them to complete a series of everyday e-mail tasks in four key areas with each product.




All three packages fared well with basic e-mail tasks, but the similarities ended there. For advanced tasks, the hands-down winner was Microsoft's Exchange. As a result, it was the only package to earn *PC Computing*'s Usability Seal of Approval, scoring a nine on our Productivity Index. This index takes into account user satisfaction, the number of tasks successfully completed, the effectiveness of each application's documentation and help functions, the technology and features of each product, and the testers' final preference.

Despite its recent upgrade, Lotus's Notes Mail couldn't touch Exchange in ease of use. Neither could Novell's GroupWise. Although Notes Mail and GroupWise worked well for basic interoffice mail, they proved hard to use for tasks that were only slightly more complex. For example, trying to route e-mail via the Internet sent most testers clicking for the Help file in Notes Mail and GroupWise. The same went for finding messages. Although Notes Mail has one of the best Find functions around, our testers had trouble discerning

## Send and Respond: Basic

| Lotus Notes Mail | Microsoft Exchange | Novell GroupWise 4.1 |
|---|---|---|
| ✔ | ✔ | ✔ |

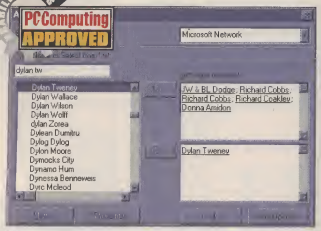
If you work in a large office, sending e-mail within your company is probably a constant activity. This was the only area where all three packages scored well in our usability testing. Each one has clearly labeled buttons for sending and forwarding mail, plus simple text-formatting tools, intuitive print dialog boxes, and distinct categorizing features.

## Send and Respond: Advanced

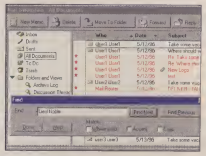
| Lotus Notes Mail | Microsoft Exchange | Novell GroupWise 4.1 |
|---|---|---|
| | ✔ | |

When we asked our testers to send e-mail via the Internet, the differences between the programs became evident. Exchange routes Internet mail directly. Notes Mail uses standard Internet addressing, but its Help file doesn't mention anything about it. In GroupWise, you must type *Internet* before the address of any mail going out of your gateway, and it hides the button that formats the address.

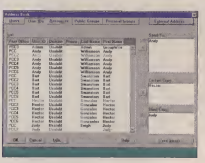
# Easiest E-mail




**Microsoft Exchange:** Little time-savers like the address book's autofill ability helped Exchange earn *PC Computing*'s Usability Seal of Approval. Our testers' productivity was also enhanced by Exchange's uncluttered address books, onscreen text-editing toolbars, and simple send and receive options.



**Lotus Notes Mail:** Our usability testers had a hard time distinguishing between the Find and Search functions, both of which reside in the File menu.



**Novell GroupWise 4.1:** Testers found GroupWise's interface cluttered and confusing. Its address book, for example, includes myriad panes like these.

between it and the Search tool. And in GroupWise, it wasn't clear to testers where they were searching, since the program looks only in the folder you currently have open. Exchange's Find function was easy to locate and use. Notes Mail, on the other hand, left users fishing through the File menu for the Find tool.

Exchange's usability edge became even more apparent when testers started building and organizing address books. Notes Mail has so many options and fields that even a simple task like entering a new address was difficult. GroupWise scored only slightly higher than Notes Mail with its address book, which delivers more information than anyone would need. But Exchange isn't without its faults in this area. Testers were confused between their personal address book and the ever-present Microsoft Network address book.

## Organizing E-mail

| Lotus Notes Mail | Microsoft Exchange | Novell GroupWise 4.1 |
|---|---|---|
| | ✔ | |

When it came to organizing and searching for old e-mail messages, Exchange scored the highest in ease of use with a Find tool that allows specific searches of subject, message body, and individual folders. In Notes Mail, our testers couldn't figure out the difference between the Find and Search commands. GroupWise's Find function falls short by searching only the folder you currently have open.

## Working with Address Books

| Lotus Notes Mail | Microsoft Exchange | Novell GroupWise 4.1 |
|---|---|---|
| | ✔ | |

Address books caused much confusion among our testers. Here, Exchange was the easiest to use overall, with simple buttons to create groups and a duplicate-address finder. Less than half of our testers completed their assigned tasks using Notes Mail, mainly because they were unable to find its address book. With GroupWise, our testers had difficulty adding new addresses.

# E-mail Call

You spend a large part of your day using e-mail, so why waste time with hard-to-use features? Although Microsoft's Exchange lacks some of the high-end tools and functions found in other e-mail applications, it's clearly the easiest package to use. It offers enough flexibility and power at an affordable price to fit the bill for most average e-mail users.

Despite a major face-lift, Lotus's Notes Mail didn't score well in our usability testing. However, it's the most powerful package available, going far beyond basic e-mail. New add-on features let you view and publish Web pages as well as share almost any digital information. On the e-mail front, Notes Mail has every feature imaginable, including enhanced security with copy-and-print protection and an improved text-editing toolbox. Although the remote-access features in Notes Mail are still medieval, if you need the most power available and have the patience to suffer its learning curve, it's the ultimate package for power users.

Novell's GroupWise wasn't a hit with our testers either, but it has some unique features that may be right for you. Its paneled interface makes organization simple and includes built-in scheduling and to-do functions that aren't found in either Exchange or Notes Mail. Novell's next offering, GroupWise XTD (which wasn't available when we were testing) is due out before summer. It promises an improved interface and even more powerful features.

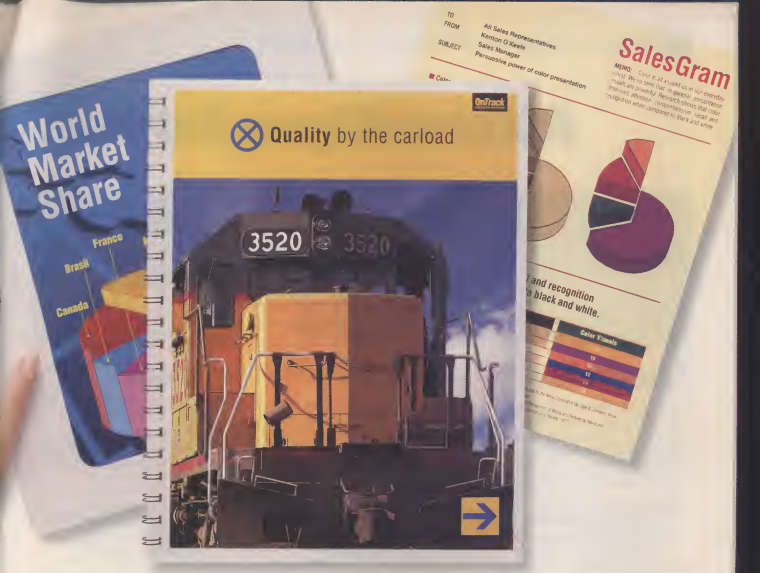
Choosing the right e-mail package comes down to priorities: For straightforward e-mail and the best integration with Windows 95, Exchange is your pick. For sophisticated communication and information-sharing power, both Notes Mail and GroupWise have powerful features. If you need to communicate on several different levels and media, go with GroupWise. If you need e-mail, Web access, and a completely open-ended way to share digital information all in one package, Notes Mail is your best option.

*Usability Lab testing was performed by* GEORGE HACKMAN, JR., LULIT BEZUAYEHU, *and* LYDIA M. KARLOWICZ.

## DECISION MAKER

CHOOSE THE RIGHT **E-MAIL PACKAGE** FOR YOUR NEEDS

| 1 Choose the factor that's most important. | 2 Choose the next most important factor. | 3 What else is important? | 4 For your needs, the best product to buy is . . . |
|---|---|---|---|
| Features | Usability | Expandability | Novell GroupWise 4.1 |
| | | Price | Microsoft Exchange |
| | Connectivity | Expandability | Lotus Notes Mail |
| | | Price | Lotus Notes Mail |
| Usability | Features | Expandability | Microsoft Exchange |
| | | Price | Microsoft Exchange |
| | Connectivity | Expandability | Novell GroupWise 4.1 |
| | | Price | Microsoft Exchange |
| Connectivity | Usability | Expandability | Novell GroupWise 4.1 |
| | | Price | Microsoft Exchange |
| | Features | Expandability | Lotus Notes Mail |
| | | Price | Lotus Notes Mail |

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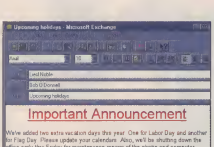
**Other E-mail Options:** What's Best for Your Business?

# Alternatives for Basic




## Dedicated Packages

If you need to send messages within your office or on the Internet, look to powerhouse e-mail packages like Microsoft's Exchange. These products consist of a client application running on each PC and an administrative package running on a server.

**System Requirements:** 386 or 486, processor, 1MB to 4MB of RAM, 2MB to 40MB of hard disk space.

**Cost:** $89 to $695 for five users, est. street price.

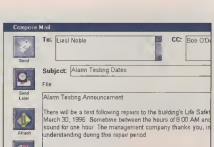
**Pros:** Because all the components need to be at a company's site, these packages offer the most secure, reliable solution for critical e-mail systems.

**Cons:** Setting up and maintaining these systems is complicated, requiring dedicated information-systems support.

**Shortlist:**

PCComputing BEST

- **Exchange** / Microsoft / (800) 426-9400 / $399 for server, est. street price, InBox free with Windows 95 / *Reader Service No. 839*
- **Eudora Pro 2.1** / Qualcomm / (800) 238-3672 / $89 for one user, $357 for five users, est. street prices / *Reader Service No. 840*
- **First Class 3.0** / SoftArc / (800) 364-1923 / $495 for server with five-user license, est. street price / *Reader Service No. 841*
- **GroupWise 4.1** / Novell / (800) 861-2507 / $446 for server, $695 for five users, est. street prices / *Reader Service No. 842*
- **Notes Mail and cc:Mail** / Lotus / (800) 343-5414 / $495 for server, $55 per user (Notes Mail), $68 per user for cc:Mail (no server needed), est. street prices / *Reader Service No. 843*




## Online Services

Looking for simple, low-cost e-mail? Online services like America Online let you send mail to other members and anyone with an Internet address. No server is required on your part. All you need is the software and a modem.

**System Requirements:** 286 processor, 2MB to 4MB of RAM, 1MB to 2MB of hard disk space.

**Cost:** Around $3 per hour (including monthly charges).

**Pros:** Retrieving your mail is painless no matter where you are (even if you're traveling), because the major online services have local numbers in most regions of the United States. Setup and use couldn't be simpler.

**Cons:** If you're interested in a full-blown list of features, look elsewhere. Most commercial online services' e-mail clients are pretty spartan. And interoffice-mail and file-sharing options are awkward.

**Shortlist:**

PCComputing BEST

- **America Online** / (800) 827-6364 / $9.95 per month (includes five hours); $2.95 each additional hour / *Reader Service No. 844*
- **CompuServe** / (800) 848-8199 / $9.95 per month (includes five hours); $2.95 each additional hour / *Reader Service No. 845*
- **Microsoft Network** / (800) 386-5550 / $4.95 per month (includes five hours); $2.95 each additional hour / *Reader Service No. 846*
- **Prodigy** / (800) 776-3449 / $9.95 per month (includes five hours); $2.95 each additional hour / *Reader Service No. 847*

## Web Browsers

Want Web-integrated e-mail? A few popular Web browsers such as Netscape's Navigator include built-in e-mail clients that let you send messages without having a stand-alone e-mail application.

**System Requirements:** 386 processor, 4MB to 8MB of RAM, 2MB to 3MB of hard disk space.

**Cost:** Free to $40.

**Pros:** If you send most of your e-mail over the Internet, using your browser's integrated e-mail component saves time. This is also a great choice if your company sets up an intranet. You can use your browser as a single tool for retrieving information and routing e-mail.

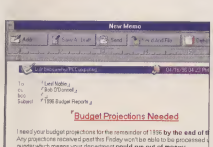
**Cons:** While Web browsers' e-mail clients have improved over the last few months, they still don't offer anywhere near the feature set of standard e-mail packages. The address books are weak, with limited grouping features, and there's absolutely no text editing available. And you won't find any of the little extras like address verification.

**Shortlist:**

PCComputing BEST

- **Navigator 2.0** / Netscape Communications / (415) 528-2555 / $39 est. street price / *Reader Service No. 848*
- **Internet Explorer 2.0** / Microsoft / (800) 426-9400 / Free download from Microsoft Network / *Reader Service No. 849*

# Messaging Needs




## Groupware

If you need complete information sharing, groupware offers group scheduling, shared databases, and project management. Like stand-alone e-mail packages, groupware applications such as Lotus's Notes let you send messages inside your organization and on the Internet.

**System Requirements:** 386 processor, 4MB of RAM, 10MB to 40MB of hard disk space.

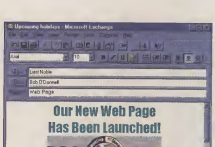
**Cost:** $199 to $995 est. street price.

**Pros:** Groupware offers enough tricks, tools, and features to keep even the biggest e-mail fans happy. It also gives you stuff beyond e-mail, such as shared databases and tools to build and view Web pages.

**Cons:** To get the full benefit, you probably have to take classes,or bribe your network administrator to spend a few hours showing you the ropes.

**Shortlist:**

- **Notes Release 4** / Lotus / (800) 346-1305 / $495 for server, $55 to $275 per user, est. street prices / *Reader Service No. 850*
- **GroupWise 4.1** / Novell / (800) 778-1850 / $446 for server, $695 for five users, est. street prices / *Reader Service No. 852*
- **GroupWorks** / HyperDesk Corp. / (800) 832-6975 / $199 for one user, est. street price / *Reader Service No. 853*
- **OpenMind 2.0** / Attachmate / (800) 426-6283 / $995 for server, $195 per user, est. street prices / *Reader Service No. 854*
- **Share 2.0** / Collabra Software / (800) 474-7427 / $995 for server, $75 per user, est. street prices / *Reader Service No. 851*




## Peer-to-Peer

If your e-mail needs are simple, a peer-to-peer system like the one found in Microsoft's Exchange lets you send interoffice mail without hassling to set up a dedicated server. You just need a simple connection between two or more office computers.

**System Requirements:** 386 processor, 1MB to 4MB of RAM, 1MB to 10MB of hard disk space.

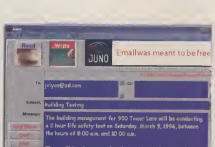
**Cost:** $119 to $399 est. street price.

**Pros:** Peer-to-peer e-mail tends to be light on features and heavy on simplicity. You just install the software, identify the other users, and you're set.

**Cons:** If you're using a true peer-to-peer system and want to send e-mail outside the office, you're sunk. To get around this, some small companies use peer-to-peer for interoffice mail and an online service for Internet mail.

**Shortlist:**

- **Exchange** / Microsoft / (800) 426-9400 / $399 for server, est. street price, InBox free with Windows 95 / *Reader Service No. 855*
- **GroupWorks** / HyperDesk Corp. / (800) 832-6975 / $199 for one user, est. street price / *Reader Service No. 856*
- **LANtastic 6.0** / Artisoft / (800) 846-9726 / $119 per user, est. street price / *Reader Service No. 857*
- **Net 44** / Leunig Communications / (800) 441-6562 / $200 for four users, est. street price / *Reader Service No. 858*




## Free Electronic Network

Don't have a big budget? Recently introduced services like Juno Online offer free e-mail that lets you send messages to anyone on the Internet. As with the e-mail that online services provide, you send and receive messages by dialing into the e-mail company's server.

**System Requirements:** 386 processor, 2MB to 4MB of RAM, 3MB to 5MB of hard disk space.

**Cost:** Free.

**Pros:** It's free—with no hidden fees. The only cost to you might be for long-distance calls, depending on where the closest access number is. Plus,these packages are fairly full-featured. You can send to and receive from anyone on the Internet, attach files, create address groups, and modify text attributes. These packages also have some of the most graphically enriched interfaces.

**Cons:** The free e-mail companies make their money by advertising—not just through graphical ads in the software, but often through text ads attached to every piece of e-mail you send out.

**Shortlist:**

- **Juno** / Juno Online Services / (800) 654-5866 / Free / *Reader Service No. 859*
- **Freomark Mail** / FreeMark Communications / (617) 492-6600 / Free / *Reader Service No. 860*

**Final Analysis:** How Much E-mail Do You Need?

# Get the Message

E-mail is your lifeline to coworkers and the outside world, so the product you choose is critical. For now, your needs are probably best suited with software created specifically for e-mail. While it's nice to be able to send messages from your Web browser or word processor, some fundamental features—such as adequate address books and easy message organization—are often left out of those packages.

When determining what type of e-mail is right for you, first consider how your office network is set up. If you have a solid server and an adequate budget, either a standard e-mail package or groupware package will fit the needs of everyone in the office.

However, if your office doesn't have the budget, the network staff, the server, or even the need for high-end features, an e-mail package on an online service would be a good choice. For around $10 a month, you get e-mail that can reach anyone on the Internet. This solution is also ideal for people who travel on business, since all four major online services have local access numbers across the United States (and some even around the world). In the same low-cost realm, free e-mail networks offer something for nothing with software abilities that aren't too shabby. The catch is the advertising you're subjected to, and most of these packages can't offer peer-to-peer abilities.

It's not the most productive option, but for those without server access, the combination of a commercial online account for Internet e-mail and a peer-to-peer e-mail package for sending messages within the office will work. We suggest that if you want peer-to-peer, you should go with Microsoft's Exchange, since it's also a top-notch e-mail package for the Internet once you have a server (or even just a direct Internet provider).

A final consideration is expandability—whether the e-mail system can grow with you and how much it will cost to add users. When you're deciding, think big. E-mail is only going to become more important (both professionally and personally) as time goes by, so choose a system you're comfortable with. It's likely you'll spend a lot of time with it.

## DECISION MAKER

CHOOSE THE RIGHT **E-MAIL OPTION** FOR YOUR NEEDS

| 1 Choose the factor that's most important. | 2 Choose the next most important factor. | 3 What else is important? | 4 For your needs, the best product to buy is . . . |
|---|---|---|---|
| Usability | Cost | Workgroup Size | Dedicated E-mail |
| | | Features | Dedicated E-mail |
| | Connectivity | Workgroup Size | Groupware |
| | | Features | Groupware |
| Cost | Usability | Workgroup Size | Peer-to-Peer |
| | | Features | Free E-mail |
| | Connectivity | Workgroup Size | Peer-to-Peer |
| | | Features | Online Service |
| Connectivity | Usability | Workgroup Size | Groupware |
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28.8/V.34

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It's all here! PC Computing's exclusive Windows 95 software guide to essential—and entertaining—home and office applications.

# Windows 95 BUYERS' GUIDE

**In This Issue:**

- Morningstar Principia
- CuteFTP
- WinSales 3.0
- Desktop Toys
- Optika FilePower
- Movie & Video Guide 1996
- SPSS 7.0 for Windows
- Barcode Anything
- Info Select 3.0
- View Software Long File Names
- Windows 95 Starts Here
- HotDog Professional 2.0
- Micrografx Windows Draw 4.0
- Florida State Football
- Larry Magid's Essential Internet

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ONLINE INVESTMENT RESEARCH

# Morningstar Principia

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RICH SCHWERIN

FILEBOX

**Morningstar Principia**

**Pros:** The most comprehensive investment research available.

**Cons:** Expensive; less-than-intuitive interface is complex and difficult to use.

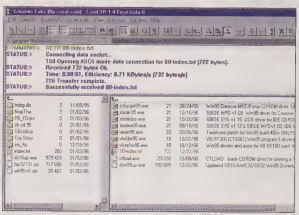
**Verdict: At these prices, only serious investors need apply.**

$55 to $995 est. street price
Morningstar
(800) 876-5005, (312) 696-6000
*Reader Service No. 868*

INTERNET UTILITY

# CuteFTP

Once you start to get serious about the Internet—and all the great software you can download there—you're going to need a little something called an FTP (File Transfer Protocol) program. And the odd thing is, there are very few commercial FTP programs around. Delrina's Cyberjack Internet suite includes an excellent 32-bit FTP client, but you'll shell out a lot of money for the collection of Internet utilities. If you just need FTP, the product for you is Alex Kunadze's CuteFTP shareware program, a 32-bit FTP client for Windows 3.1, Windows 95, and Windows NT.




CuteFTP's easy-to-use interface evokes Windows 3.x's File Manager. And because it gives you a window on your local hard drive, CuteFTP lets you drag and drop files from the FTP host site to a specific directory on your drive.

You'll also find a well-constructed toolbar; extensive viewing and sorting controls; support for passwords, fire walls, and custom FTP commands; searching and filtering tools; and a site manager for creating and storing links to specific FTP sites.

When you plunk down your $30 to register this product, your reward is CuteFTP's bookmarking feature. All told, this is one heck of a deal. Check it out at the CuteFTP Web site (http://papa.indstate.edu:8888/CuteFTP/), or on our live link at www.pccomputing.com.

SCOT FINNIE

FILEBOX

**CuteFTP**

**Pros:** A 32-bit FTP with an easy-to-use interface.

**Cons:** Can hog screen space; configuration controls are a bit complicated.

**Verdict: The most economical 32-bit solution for your Internet FTP woes.**

$30 registration fee
Alex Kunadze
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*Reader Service No. 869*

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# The smart way to

**Pick your target.** Are you looking for all the florists in Seattle? All the plumbers within ten miles of your office? The nearest 200 auto body shops? Every bakery in your ZIP code? No problem. They're all on Select Phone's 6 CD-ROMs. And finding them is a piece of cake.

Because unlike your local phonebook, Select Phone lets you drill down through *every published listing* in the U.S. So you can look up all 100 million listings any way you want. By name, street address, city, state, ZIP code, phone number or business heading. And get this – you can even find potential new customers based on their *exact distance* from your home or office. Listen to how three businesses use Select Phone every day to find new customers.

## 1 GeoTarget™ or *"Give me the nearest"*

*A SELECT PHONE EXCLUSIVE. Find listings based on their distance from your home, office, or any point you choose.* Meet Brian Goodro, Sales Manager at Thomas Ford in Beverly, Massachusetts. Brian uses Select Phone's GeoTarget feature to help sell vans. His first move is to target plumbers, likely prospects to buy a new van. So

Brian opens Select Phone, clicks on the Business Heading field, and pulls up *PLUMBERS.* Next he uses the GeoTarget feature to narrow his search to "all the plumbers within 10 miles," (or he could ask for the 200 closest plumbers – the choice is his). Now Brian has an instant, targeted list, ready to export to his word processor for a fast and effective direct mail or telemarketing program.

## 2 Street-smart marketing – or *"Give me all the neighbors"*

*The Select Phone way to canvas the neighborhood.* Brenda Jackunas is a franchise owner of Windsor Chem-Dry, an Oriental and area rug cleaning shop. Brenda likes to build her business using customer referrals. First she looks up a current customer in Select Phone. Tags it. Then she hits the little red door "Neighbor" button. Within seconds, Select Phone generates a prospect list of her customer's neighbors, the people living on the same street. (She can also use this feature to create a list of all companies within the same office building!) Armed with this list, Brenda gets the customer's permission to have their neighbors drop by and see her company's work. Talk about micro marketing! Who better to sell for you than your own customers. But does it really work? In Brenda's words, "Very successfully!"

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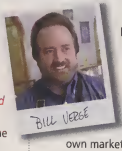


Like many successful small business owners, Bill must rely on his own marketing efforts to build his business. It's all up to him. So when he's not at his work-bench, Bill's at his computer. After 17 years as a retailer, Bill knows he needs to do at least four mailings a year – 10,000 pieces at a time – to generate decent store traffic. No small investment for any business. After years of renting expensive lists he could only use once, Bill discovered Select Phone. Now he creates his own instant, ready-to-mail lists, saving him the cost, time and aggravation of renting them from a broker. And better yet, Bill is now free to use any or all of Select Phone's 100 million listings as often as he wants.

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## 4 PC World picks Select Phone 1996 Best Buy among all CD-ROM Phone Directories!

*"...(PC World) focused on accuracy, ease of use, and search-and-retrieval capabilities. The Best Buy goes to Select Phone for excellence in all three categories. ...its 89 percent accuracy rating surpassed all the other directories'. Extensive search capabilities and a long list of export file formats put it over the top."*

– PC World, February 1996

## 5 30-Day, Money-Back Guarantee

If you're in business for yourself, if you run a store or an office from your home, if you're looking for a smarter way to find new business, then you owe it to yourself to try out Select Phone. Order now. Take 30 days to check it out. Your business will boom and you'll never look back.

*Get the complete low-down: name, address, phone number, SIC code and business heading, publication date, how long it has been listed in Select Phone, geographic location, and the distance from your office, home or any other point – all with just a button click!*

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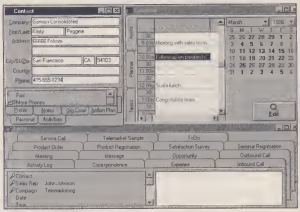
CONTACT MANAGEMENT

# WinSales 3.0

First there's a letter. Then a follow-up phone call. Then a fax. Suddenly, you're receiving regular correspondence from a sales or marketing person you've never met. Annoying as this may be, you've learned about the company's product or service. You can use the same tactic for your business. But automating a sales and marketing strategy is easier said than done. That's where WinSales 3.0 can help.

WinSales adds excellent follow-through agents to networkable phone-book and scheduling features. You define action plans for your company's sales strategy and set up triggers, or event-driven scripts, that determine the course of contact interaction. By associating these triggers with a specific campaign, follow-up call, meeting, or task, you automate the sales or marketing process. And by linking contacts, action plans, and whole projects, you can view all past and future interactions.




In the next version of WinSales, we'd like to see wizards that walk you through the program's trickier features and set up agents for you. Another drawback is the price: Few software packages sell for as much as $495 these days.

For companies that need to automate their follow-through actions and provide templated plans and scripts, WinSales adds structure and streamlines procedures. Just make sure you build in time for the learning curve. **JAMES OLIVER CURY**

FILEBOX

**WinSales 3.0**

**Pros:** Automated follow-through and group-oriented action-planning features.

**Cons:** Tricky interface; no wizards to help you set up.

**Verdict: Powerful contact management, if you can get past the complex interface.**

$495 (single user), $1,495 (network version) est. street price
WinSales
(206) 747-2464
*Reader Service No. 870*

ENTERTAINMENT

# Desktop Toys

Sometimes that never-ending spreadsheet gets to be too much. You just feel like, well, destroying something. Lucky for you, Desktop Toys serves as a nice alternative to a smashed monitor. With this collection of nine entertaining animated gadgets, you can blow up or rub out anything on your Windows desktop—without doing any permanent damage.

The first few go-rounds with Desktop Toys are fun: Bomb this, shoot that, decimate whatever. There's a gun, a hammer, a spaceship, a huge eraser, a gigantic animated thumb that smudges out everything in its path, a painter, and an alien superhero. The novelty of this pseudo-violence quickly wears thin, but a couple of simple games give Desktop Toys a slightly longer life on your hard drive. A unique gizmo, for example, changes your mouse pointer into a spring, which you can bounce objects off to get "splat points."

There's only one hitch: When your stress level is up, you want to create havoc *now*. But starting up Desktop Toys takes a while. Even on a Pentium, by the time you start shooting, the impulse may have passed. **JACK LYON**

FILEBOX

**Desktop Toys**

**Pros:** Mindless fun and stress relief for even the worst day.

**Cons:** Short on tricks and long on start-up time.

**Verdict: A cheap way to shoot holes in any spreadsheet or report; worth the price for its entertainment value.**

$18 est. street price
Desktop Toys
(800) 245-4525
*Reader Service No. 871*

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PENTIUM PRO PROCESSOR

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# If you think file transfer is all we do, you need some time away from the office.

Designed for Microsoft Windows 95

To appreciate how much more LapLink® for Windows® 95 has to offer, all you have to do is hit the road.

Wherever you go–across the hall, across town or across the country–if you've got LapLink, you have everything you need to access anything you want on your desktop *or* your network.

With this single piece of software, you can read and send e-mail, run databases and custom applications, synchronize data and, yes, even transfer files.

Since there's no need to change apps to do all these things, there's no need to hang up and redial. And since LapLink works the same way over modems, IPX and TCP/IP networks, serial cables, parallel cables, wireless, even the Internet, there's no need to laboriously reconfigure.

And there's no need to worry about compatibility. Our 16-bit version is built right into LapLink for Windows 95, so connecting to Windows 3.1 systems is no problem at all.

By now, you probably can't wait to get your hands on the latest LapLink. So you'll be glad to know that upgrading–from an earlier LapLink, or from another product altogether–is ridiculously inexpensive. Call 800-843-9397. Better yet, see your reseller. It'll give you an excuse to get away from the office.

TRAVELING SOFTWARE

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**Circle 234 on reader service card.**

# Two guesses who just bought a Quantex.

intel inside pentium processor

*No, you're not seeing double. But you are seeing a dual reaction to getting a Quantex. It's the same reaction customers have been experiencing for years. One of confidence. Excitement. And the knowledge that they've just made one of the smartest buys since computers were invented.*

*You see, Quantex customers compare. Really compare. Not just price, but features and technology, too. And when they do, they discover dollar for dollar, feature for feature, Quantex can't be beat. When you compare and decide on a Quantex, you'll look pretty pleased, too. Who knows, maybe you'll find your smiling face in one of our ads.*

# Quantex Gives You The Best

## YOU AND YOUR QUANTEX PC ARE A PERFECT PAIR.

SOME PEOPLE SAY that Quantex PCs seem to have a dual personality. On one hand, they're packed with cutting-edge technology, power, and features. On the other hand, they're aggressively priced to be gentle on your bank account. Which side reflects the "real Quantex?" Both of them. From our high-performance multimedia machines to our potent workstations, our customers all agree: Quantex gives you more of what you want at an unbeatable value. So shop around. Read the reviews. Compare us feature for feature and dollar for dollar with any other PC on the market. The more closely you look, the better you'll see. No one else can quite match up to Quantex.

## OUR COMMITMENT WORKS TO YOUR ADVANTAGE.

At Quantex, your complete satisfaction is our number one priority. We've based our business around it. And while our company has evolved over the years, our focus has never wavered.

How do we do it? By sweating the details. We're working harder, day in and day out, to create a line of meticulously engineered, technologically advanced, fully-loaded and competitively priced PCs. From family multimedia systems to Pentium® Pro microprocessor workstations, we'll never compromise about putting performance into your hands. That attitude reaches into every facet of our company. You'll notice it in our people, in conveniences like our Internet homepage, and, of course, in our award-winning systems.

*I'm into all the hottest features and top performance Quantex offers.*

## PLUG AND PLAY, THROUGH AND THROUGH.

Here's a tip from Quantex: when looking for a personal computer, you should be aware that even though a system loaded with Windows® 95 is Plug and Play *capable*, that doesn't mean that the *components* are Plug and Play. Fact is, most companies' components are not! And that can lead to difficult upgrading or even component incompatibility!

That's why, from monitors to motherboards to multimedia, every component that goes into a Quantex is Plug and Play compliant. With this assurance that everything is self-configuring, you'll never have to worry about setting jumpers or performing compatibility tests. It's just one more way Quantex makes it easier.

**WINDOWS MAGAZINE** "System Struts Speed to Spare: the Quantex QP5/133 SM-1 is the speed demon multimedia PC you've been looking for... the QP5/133 is so fast you'll expect to hear sonic booms even after launching bloated applications...it's the perfect blend of speed, functionality and potential..." (December '95).

**PC WORLD** "The Quantex QP5/133 SM-1 still delivers a whopping amount of computer for the money. It costs nearly $1000 less than its typical Pentium-133 competitor..." (November '95)

**PC Computing** Quantex QP5/100 SM selected Top Pick: Pricewise Direct System. "You can't get more for less. We checked" (November '95).

Designed for Microsoft Windows 95

# Of Both Worlds

**SOME PEOPLE LIKE TO JUDGE US BY THE COMPANY WE KEEP.**

That's why we only work with products you know and trust from the best names in the business. Like Intel, Microsoft, Novell, Diamond Multimedia, Sony, Western Digital, MAG Innovision, Altec Lansing Multimedia, Ensoniq and Toshiba.

With components like these, you're guaranteed top-flight performance and maximum reliability. When it comes to quality, Quantex doesn't cut corners!

**PENTIUM PRO PROCESSORS: THE LEAP IN PC TECHNOLOGY.**

They've finally arrived! And Quantex has incorporated them into some of the finest workstations you'll find. We've combined Intel's advanced Pentium Pro processor with the new Intel Orion Chip Set, SCSI technology, vast storage capacity, and Windows NT for the ultimate in power, accessibility, and flexibility. The result is one of the fastest, most reliable workstations on the market. Looking for cutting edge? Check out Quantex.

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It's no secret that our website has become an Internet hotspot! Whether you're consulting one of our salespeople, accessing system information, downloading new software upgrades, or linking up with Quantex Computer owners, our site is the place to be!

*I went for that great Quantex Price.*

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Vigorous testing and strict quality control give our PCs one of the industry's best reliability records. We're so confident, each system is backed by a 30-Day Money Back Guarantee. Plus, there's One Year Express Parts Replacement, One Year Free On-Site Service,* and Toll-Free Technical Support. We even offer the option of extending the protection of your system for up to 4 years under the GE Service Protection Warranty Plan. At Quantex, we've got you covered.

intel inside pentium processor

**ComputerLife** "With solid performance and a meaty bundle of home-oriented software, Quantex's QP5/100 M-4 stands out as a well stocked home system...the best performer of the bunch, the QP5/100 M-4 is a savvy purchase" (December '95).

**MULTIMEDIA WORLD** Leveled ☆☆☆☆☆ on our QP5/100 M-4: "When low price meets high performance and a wealth of features, our database flags an All-Star Winner" (December '95).

QUANTEX

http://www.quantex.com

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Above system features QP5/SM-1

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- Intel 100MHz Pentium processor
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- 15" MAG Digital 1280x1024 Monitor
- 14,400 Baud Fax/Modem w/Voice Mail
- Toshiba 6X 175ms EIDE CD-ROM Drive
- 16-Bit Stereo Sound Card
- Digitally Controlled Stereo Speakers
- Mini-Tower Case
- 104-Key keyboard & Microsoft Mouse
- Microsoft Windows 95
- Family Software Bundle (preinstalled)

QP5/75 M-2.....$1400
QP5/120 M-2.....$1640

## QP5/133 SM $2249

- Intel 133MHz Pentium® processor
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- 256KB Pipelined Burst Cache
- 1.6GB 9ms EIDE Made 4 Hard Drive
- 3.5" 1.44MB Flappy Drive
- STB PowerGraph 64 Video w/ 2MB EDO RAM (MPEG Playback Ready)
- 15" MAG Digital 1280x1024 Monitor
- 28,800 Baud Fax/Modem w/Voice Mail
- Tashiba 6X 175ms EIDE CD-ROM Drive
- Ensaniq 16-Bit Wavetable Sound Card
- Altec Lansing ACS-5 Speakers
- Mid-Tower Case
- 104-Key keyboard & Microsoft Mouse
- Microsoft® Windows® 95
- Professional Software Bundle (preinstalled)

QP5/100 SM.....$2099
QP5/120 SM.....$2149
QP5/150 SM.....$2349

## QP5/150 SM-1 $2699

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- 256KB Pipelined Burst Cache
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- 17" .26dp MAG 1280x1024 Monitor
- 28,800 Baud Fax/Modem w/Voice Mail
- Tashiba 6X 175ms EIDE CD-ROM Drive
- Ensaniq 16-Bit Wavetable Sound Card
- Altec Lansing ACS-5 Speakers
- Mid-Tower Case
- 104-Key keyboard & Microsoft Mouse
- Microsoft Windows 95
- Professional Software Bundle (preinstalled)

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QP5/133 SM-1.....$2599
QP5/166 SM-1.....$2899

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- 512KB Pipelined Burst Cache
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- Toshiba 6X 175ms EIDE CD-ROM Drive
- Ensaniq 16-Bit Wavetable Sound Card
- Altec Lansing ACS-31 Speakers w/ subwoofer
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Designed for

Microsoft
Windows 95

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- 3.5" 1.44MB Floppy Drive
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- 15"MAG Digital 1280x1024 Monitor
- 14,400 Baud Fax/Modem w/Voice Mail
- Toshiba 6X 175ms EIDE CD-ROM Drive
- 16-Bit Stereo Sound Card
- Digitally Controlled Stereo Speakers
- Mid-Tower Case
- 104-Key keyboard & Micrasoft Mause
- Microsoft Windows95
- Family Software Bundle (preinstalled)

QP5/75 M-3.....$1749
QP5/100 M-3.....$1849
QP5/133 M-3.....$1999

## QP5/133 M-4 $2199

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- Microsaft Windows95
- Family Software Bundle (preinstalled)

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QP5/150 M-4.....$2299
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- Diamond Stealth64 PCI w/2MB VRAM
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- Toshiba 6.7X SCSI CD-ROM Drive
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- 3-Year Warranty*
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QP6/180 WS-1.....$4599
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- MS Windaws NT Workstatian 3.51
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## Family Software Bundle

- Novell PerfectHome: PerfectWorks; Memphis Math; Write With Me; InfoCentral; Grammatik; Clip Art for the Home; Clip Art for the Office; Read With Me 1 & 2; PerfectWorks for Kids
- Grolier Multimedia Encyclopedia
- Complete Reference Library (over 10 titles)
- Al Unser Jr. Arcade Racing
- USS Ticonderoga
- Animals II
- How Your Body Works
- Quicken Financial Manager-SE
- EveryWhere USA Travel Guide
- America Online, Prodigy, CompuServe (one month trial membership to on-line services)
- NetCruiser Plus (Free Internet Access of over 400 hours for one month)

## Professional Software Bundle

- Novell PerfectOffice: WordPerfect 6.1; Quattro Pro 6.0; Envoy; InfoCentral; Presentations GroupWise
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- Quicken Financial Manager-SE
- Astound (#1 in Multimedia Presentations)
- Phone Disc Business '95
- Al Unser Jr. Arcade Racing
- USS Ticonderoga
- America Online, Prodigy, CompuServe (one month trial membership to on-line services)
- NetCruiser Plus (Free Internet Access of over 400 hours for one month)

## Upgrade Specials

"Options Available with System Purchase"

- Ensaniq* 16-bit wavetable sound card and Altec Lansing ACS-31 Speakers w/subwoofer Add $99 (upgrade from systems with 16-bit sound card).
- Microsoft Natural Keyboard Add $59
- Panasonic KX-6100 Laser Printer Add $349

"Options Available with QP6 Workstation Purchase Only"

- Diamond Stealth64 PCI w/2MB VRAM to 4MB VRAM... Add $149
- 2GB Wide SCSI Hard Drive to 4GB Wide SCSI..... Add $299
- 6.7X SCSI CD-ROM Drive to Panasonic Power Drive*....Add $199
- Sony 1.3GB Magneto Optical Drive.....Add $1399
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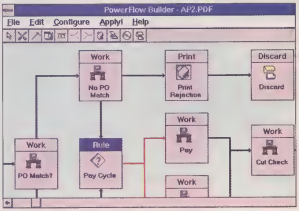
IMAGING AND DOCUMENT MANAGEMENT

# Optika FilePower

When you consider the cost of office space these days, archiving paper documents just doesn't make good financial sense. A better solution? Using imaging for document management. Designed for large businesses that handle hundreds, or even thousands, of pages of orders and invoices every day, Optika's FilePower Suite CD provides an easy-to-use open client-server solution to help tame the paper tiger.

FilePower handles three of the steps in the imaging process—scanning, storing electronically, and routing (for archiving, faxing, or printing). And it combines those tasks with program-development tools, output to laser disc, and workflow analysis and modification—all on one CD-ROM. Using FilePower's unique WorkBooks distribution metaphor, users package files together in "containers" that they can disseminate via e-mail, the Internet, or CD-ROM.




Although FilePower has competitors in the market for enterprise-wide document imaging and management (namely, FileNet and Wang), none offers a single solution that encompasses so many areas. Optika FilePower works with all platforms and any number of sites. It runs on Windows clients with either Windows or Windows NT servers. Databases it supports include Oracle, SQL Server, Sybase, and Gupta's SQL Base. JAMES OLIVER CURY

FILEBOX

**Optika FilePower Suite CD**

**Pros:** Enterprise- or workgroup-wide imaging and document management.

**Cons:** It's expensive.

**Verdict: A complete, open imaging system for sites that handle tons of paper-based records.**

$2,000 per seat est. street price
Optika Imaging Systems
(719) 548-9800
*Reader Service No. 872*

ENTERTAINMENT REFERENCE

# Movie & Video Guide 1996

It's Friday night after a long week at the office, and all you want to do is relax and pop a movie into the VCR. But with so many new movies hitting the shelves, how do you choose? You could browse through your local video store, or you could pick up the software edition of Leonard Maltin's Movie & Video Guide 1996.

You don't need a CD-ROM drive to find out what's hot and what's not in the movie world. On six floppy disks, the Movie & Video Guide provides detailed listings, ratings, and descriptions.

Curious to know what other movies Vivian Leigh starred in? You can search for movies by actor, year, or director; Leonard Maltin's rating; or a host of other attributes. But be forewarned: The search engine is *s-l-o-w*.

We'd love to see why a movie is rated R, to help decide whether it's suitable for kids. And stills or video clips would be a plus. But for that, you'll have to pick up a CD-ROM like Microsoft's Cinemania 96. For quick movie information, though, Leonard Maltin's Movie & Video Guide 1996 is a handy digital guide to the world of film. KYLA K. CARLSON

FILEBOX

**Leonard Maltin's Movie & Video Guide 1996**

**Pros:** No CD-ROM drive needed.

**Cons:** Slow search engine; lacks cool multimedia.

**Verdict: A quick but limited way to find a movie for any occasion.**

$35 est. street price
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(800) 253-6476, (212) 366-2000
*Reader Service No. 873*

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The In Focus LitePro® 580. The new standard in multimedia projectors.

Hyper. It means above and beyond. And that's our new LitePro 580.

It's the smallest, lightest and brightest multimedia projector. Ever.

The LitePro 580 has built-in video support and stereo speakers. Yet it's about the size of an ordinary slide projector. It's packed with other features, too, like a zoom lens that will fill a 25-foot wall with your image. And a remote control with trackball that operates your PC or Mac like a wireless mouse.

*New polysilicon active matrix means you get the highest image quality of any LCD projector.*

Plus, it's got the latest polysilicon active matrix LCD.

Together with advanced dichroic optics, it gives you the brightest image (over 200 lumens reflected off the screen) and the truest, most saturated colors of any LCD projector. So you can give outstanding full-motion multimedia presentations and training sessions without dimming the lights.

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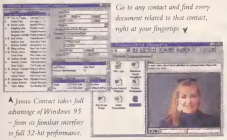
# Eccentric Documentcentric

Introducing Janna Contact 95. It's the sexiest, most sensible, most useful contact manager you've ever seen. Because it's the only one that truly manages contacts.



*Go to any contact and find every document related to that contact, right at your fingertips*

*Janna Contact takes full advantage of Windows 95 – from its familiar interface to full 32-bit performance.*

Not just your phonebooks and schedules (which it does brilliantly, by the way), but everything that has anything to do with your contacts, including every letter, e-mail, fax, spreadsheet, presentation, voicenote and videoclip. Regardless of the application it goes with. Right at your fingertips, right from Janna Contact, exactly when you need them (which is "now", because your hottest prospect is calling). We call it integrated contact *and* document management. You'll call it brilliant.

You'll also call it really cool. Because it's the first contact manager to take full advantage of Windows® 95. The only one that's certified Microsoft® Office 95 compatible, so it looks and feels just like the world's best-selling suite. And it's available for Windows 3.1 with Office version 4 compatibility. It's also networkable right out of the box, so you can share everything across your workgroup.

Designed for Microsoft® Windows 95 — Microsoft® OFFICE Compatible

Call for a dealer near you. Or to take advantage of our $99 introductory price or $69 upgrade for ACT! and other contact managers and PIMs, including Lotus® Organizer, ECCO,™ Sidekick®, and Maximizer®. You'd be crazy not to.

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Get the hottest contact manager working for you without delay. Upgrade your copies of ACT!® to new Janna Contact. Our new Import Wizard will convert your entire ACT! database – including calls, meetings and to dos! Limited time offer. Call today!

Janna Contact 95

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**For more information and a demo copy, log on: http://www.janna.com or CompuServe: GO JANNA. For information via fax: 800-282-0478.**

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**Circle 128 on reader service card.**

# You've got *insurance* *if* Johnny crashes *your car.*

# But *what if* he crashes your *hard drive?*

That's why you've got to buy an Iomega Ditto drive. It's a cool little red drive that works like insurance for all the stuff on your PC: software applications, files, work, games, everything.

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Insurance for the important stuff on your PC.

Installs in 5 minutes.

Also available in a 3.2 gigabyte model.

**1-step software**

Easy to use point-and-click operation.

Backs up while you work.

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- New DWG file compatibility for AutoCAD file transfer.
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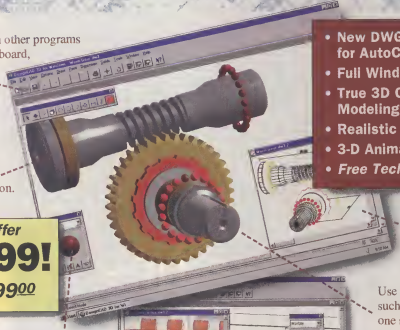
Share your designs with other programs using the Windows clipboard, OLE-2, and file compatibility with DWG, DXF, IGES, BMP, WMF, and other file formats.

Produce professional results with smooth shading and 3D animation.



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The 2D drawing mode allows easy designing of floor plans and shop drawings.

BEST OF BYTE COMPETITIVE 95

PC MAGAZINE EDITORS' CHOICE

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The complete CAD solution. Eight great programs individually would cost over $1,900. Your price for DesignCAD Office is only $995.

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Circle 103 on reader service card.

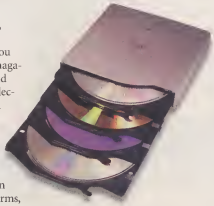
H-704-6

# MULTIPLE CHOICE.

**Introducing the Alps 4X CD-ROM Changer.** The more choices you have, the more freedom, flexibility, and convenience you enjoy. And greater choice is exactly what the new Alps 4X CD-ROM Changer is all about. While most CD-ROM drives handle one disk at a time, the Alps 4X CD-ROM Changer accommodates up to four CDs in a convenient, portable magazine.

So you can load up multiple applications, encyclopedias, or audio CDs. And switch from one to another with a mouse click. It's the easiest, most efficient way to work, play, do research, and get more done, faster. Even better, you can buy extra CD-ROM magazines to organize, store, and protect your CD-ROM collections. And in seconds, load anything from a suite of business applications to a collection of Bach suites.

The versatility doesn't end there. The Alps 4X CD-ROM Changer runs on today's most popular platforms, including DOS, Windows® 3.1, and Windows 95. It handles a wide variety of formats, including audio CD, Photo CD,™ CD+, CD-i-Digital Video, and video CD. And it's also easy to install, so you can do it yourself. The Alps 4X CD-ROM Changer fits any standard 5.25" drive bay. It works with most standard sound boards. And everything needed for installation is included—user's guide, software, enhanced IDE-compatible interface card, cables, and MultiPlayer™ software for playing audio and video CDs with full on-screen control. Add a full-motion RealMagic™ card, and you can even play video in Windows 3.1.



Finally, the 4X CD-ROM Changer is built to last because it's built around a unique disc-changing mechanism created by Alpine Electronics, a world leader in automotive audio systems. That's why it has a level of dependability, sophistication, and advanced features unmatched by any other CD-ROM drive. To top it all off, it's covered by an Alps one-year warranty. For details and the name of your nearest Alps dealer, call 1-800-720-ALPS (2577). And start enjoying freedom of choice with the new Alps 4X CD-ROM Changer.

**ALPS**

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(800) 720-ALPS (2577)
CompuServe: GO ALPS
BBS: (408) 432-6424
Internet: http://www.alpsusa.com

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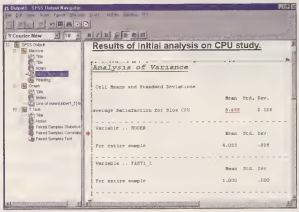
 *More reviews on page 192*

STATISTICS

# SPSS 7.0 for Windows

If you're in a business that involves statistics, odds are you spend a lot of time switching between your spreadsheet, your word processor, and a statistics package like SPSS 6.0 for analyzing data. Now you can work in one program: SPSS 7.0 for Windows 95 and Windows NT integrates several key spreadsheet and word-processing features, making it a more useful tool for statistical analyses.

SPSS 7.0 gives you greater control over your output. For example, you can change a font's size and color as well as add headers within the report. The package includes pivot tables and preformatted table templates for creating attractive output.




By employing a split-screen view (one half is the SPSS output and the other a hierarchical organization of the sections of the analysis), the Output Navigator makes it easier to work with completed statistical output. The hierarchical structure lets you quickly jump to sections in your analysis.

Improvements in statistical analysis include a more versatile General Linear Modeling procedure as well as new functions and probability plots, such as Weibull and Gamma.

While SPSS 7.0's interface is still less intuitive than a spreadsheet's, it's a lot easier to use than previous versions. Combining data analysis with reporting and presentation functions, SPSS 7.0 is the premier statistical package for Windows 95.

GEORGE HACKMAN

**FILEBOX**

**SPSS 7.0 for Windows**

**Pros:** Improved presentation and reporting features.

**Cons:** Still not as easy to use as a spreadsheet.

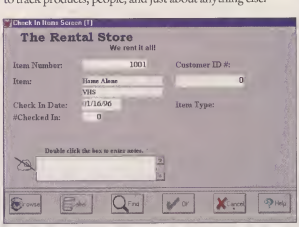
**Verdict: The premier statistical-analysis package for Windows 95.**

$695 for base module; starts at $395 for add-on modules
SPSS
(312) 329-2400, (800) 543-2185
*Reader Service No. 874*

BAR CODING

# Barcode Anything

So you want to bar code your software? Fine. Your name badges? No problem. Your dog? *Hmm*, maybe not your dog. But if there's room for a label, with Zebra Technologies' Barcode Anything suite, chances are you can bar code it. Use this program to create a bar-coding system to track products, people, and just about anything else.




Barcode Anything comprises three components: Label helps you design barcoded labels for videotapes, folders, or badges. Track lets you import information from those labels into its database. And Scan lets you locate that database information quickly by scanning the bar-code labels with a handy parallel-port scanning wand.

The labels in Barcode Anything are simple to create. New users should beware, however: Lurking beneath that familiar Windows interface is a true database filled with numbers, commas, and commands. Casual computer users may find it intimidating.

Barcode Anything is great for identifying wares in storage and at trade shows, but it may be too labor-intensive for weekend bar coders.

JULIE McCULLOUGH

**FILEBOX**

**Barcode Anything**

**Pros:** You really can bar code almost anything.

**Cons:** Figuring out what to do after you apply your bar codes is a different story.

**Verdict: Perfect for a video store's tapes or a medical office's records.**

$379 est. street price (includes scanning wand)
Zebra Technologies VTI
(801) 576-9700, (800) 477-5588
*Reader Service No. 875*

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**SATELLITE PRO 100CS 75MHz PENTIUM® PROCESSOR**
•8MB EDO RAM expandable to 40MB maxmum •500MB HD •10.4" dual scan color display •Nimh battery •Local bus video •Integrated audio •2 PC card slots •Pre-loaded with Windows 95®

$1869

**T2130CS SATELLITE PRO**
•INTEL 486DX4/75 MHz •8MB RAM •500MB HD •3 1/2" 1.44 fdd •10.4" dual scan color display with 1MB vlb video graphics •Built-in trackpoint pointing device •2 PCMCIA slots •Pre-loaded with Windows 95 •1 year warranty

$1399

| MODEL# | PROCESSOR | RAM | HD | DISPLAY | | PRICE |
|---|---|---|---|---|---|---|
| T2100 | 486DX2/50 | 4MB | 260 | 9 5" | Mono | $989 |
| T2100CS | 486DX2/50 | 4MB | 330 | 10.4" | D/S Color | $1099 |
| T2110CS | 486DX4/75 | 4MB | 330 | 10 4" | D/S Color | $1199 |
| T2130CT | 486DX4/75 | 8MB | 500 | 10.4" | Act Color | $1888 |
| T2150CDS | 486DX4/75 | 4MB | 500 | 10 4" | D/S Color | $1799 |
| T2150CDT | 486DX4/75 | 8MB | 500 | 10 4" | Act Color | $2499 |
| T2450CT | 486DX4/75 | 8MB | 520 | 9 5" | Act Color | $3299 |
| T610CT | PENTIUM 90 | 8MB | 720 | 9 5" | Act Color | $3399 |
| T400CDT | PENTIUM 75 | 8MB | 810 | 10 4" | Act Color | $3549 |
| T400CS | PENTIUM 75 | 8MB | 810 | 10.4" | D/S Color | $2299 |
| T410CS | PENTIUM 90 | 8MB | 810 | 11.3" | D/S Color | $3099 |
| T410CT | PENTIUM 90 | 8MB | 810 | 11.3" | Act Color | $3749 |
| TEC 700CS | PENTIUM 120 | 8MB | 1 2G | 11.3" | D/S Color | CALL |
| TEC 700CT | PENTIUM 120 | 16MB | 1 2G | 11 3" | Act Color | CALL |

## AST

**ASCENTIA 950N PENTIUM® MULTIMEDIA**
•INTEL 75MHz PENTIUM® processor •8MB RAM expands to 40MB RAM •540MB removable HD •1MB vga graphics •256K cache •2 PCMCIA slots •10.4"vga dstn color display •Lithium ion battery •3 year warranty

$1999

| MODEL# | PROCESSOR | RAM | HD | DISPLAY | | PRICE |
|---|---|---|---|---|---|---|
| 950N P/75CS | PENTIUM 75 | 8MB | 500 | 10 4" | D/S Color | $1999 |
| 950N P/75CS | PENTIUM 75 | 8MB | 800 | 10 4" | D/S Color | $2499 |
| 950N P/75CT | PENTIUM 75 | 8MB | 800 | 10 4" | ACT Color | $2899 |
| 950NLM90 | PENTIUM 90 | 8MB | 1 2G | 10.4" | D/S Color | $2999 |
| 950N/120 | PENTIUM 120 | 8MB | 1.2G | 11 8" | ACT Color | $3999 |

## SHARP

**PC3020**
•5X86/100MHz processor •8MB RAM expandable to 40MB •500MB removable HD •10.4" dual scan color •32-bit vesa local bus w/graphics acc. •2 PCMCIA type II slots •Glidepoint trackpad •Advanced power management •1 year Sharp warranty •Optional 16-bit sound card & 14.4bps fax/modam

$1649

| | | | |
|---|---|---|---|
| PC-3030/3070 | CALL | PC-9010/9040 | CALL |
| PC-3060 | $1799 | PC-9070 | CALL |

## COMPAQ

**CONTURA 430C INTEL 100MHz PROCESSOR COLOR NOTEBOOK**
•INTEL 486DX4/100 •8MB RAM expandable to 32MB max •720MB high capacity harddrive •10.4" dual scan color display •19mm optical trackball •2 PCMCIA type II slots •wall mount AC adapter •3 year warranty

$1899

| MODEL# | PROCESSOR | RAM | HD | DISPLAY | | PRICE |
|---|---|---|---|---|---|---|
| 420C | 486DX4/75 | 8MB | 420 | 10 4' | D/S Scan | $1688 |
| 420CX | 486DX4/75 | 8MB | 420 | 10 4" | Active Color | $1849 |
| 430CX | 486DX4/100 | 8MB | 720 | 10 4" | Active Color | $2399 |
| LTE5000 | Pentium 75 | 8MB | 510 | 10 4" | D/S Scan | $3297 |
| LTE5000 | Pentium 75 | 8MB | 810 | 11 3" | D/S Scan | $3999 |
| LTE5000 | Pentium 75 | 8MB | 810 | 10 4" | Active Color | $4349 |
| LTE5100 | Pentium 90 | 8MB | 810 | 10.4" | Active Color | $4599 |
| LTE5100CD | Pentium 90 | 8MB | 810 | 10 4" | Active Color | $4999 |

## NEC

**VERSA 40000 W/CD-ROM**
•INTEL 75MHz Pentium® Processor •8MB RAM standard to 40MB max •Removable 540MB hd •10.4" dual scan •PCMCIA 2 type II slots •Stereo sound •Built-in mic. •Versaglide trackpad •Pre-installed w/Windows® 95 •1 year warranty

$3099

| MODEL# | PROCESSOR | RAM | HD | DISPLAY | | PRICE |
|---|---|---|---|---|---|---|
| 4000D CD | PENTIUM®/75 | 8MB | 540 | 10 4 | D/S Color | $3099 |
| 4000D | PENTIUM® 75 | 8MB | 540 | 10 4" | D/S Color | $2799 |
| 4000C | PENTIUM®/75 | 8MB | 540 | 10 1" | ACT Color | $3199 |
| 4050C | PENTIUM®/90 | 8MB | 720 | 10 1" | ACT Color | $3999 |
| 4050H | PENTIUM®/90 | 8MB | 810 | 10 4" | Act Color | $4199 |
| 4080H | PENTIUM®120 | 8MB | 1GIG | 10 4" | Act Color | $4699 |
| 2000D | 486DX/75 | 4MB | 340 | 9 5" | D/S Color | $1399 |
| 2000C | 486DX/75 | 8MB | 340 | 9 5" | Act Color | $1879 |
| 2000C | 486DX/75 | 8MB | 540 | 9 5" | Act Color | $2099 |

## TEXAS INSTRUMENTS

**EXTENSA 560CD**
•75 MHz PENTIUM® W/PCI pci bus •8MB RAM expandable to 40MB •810MB removable HD •10.4" d/s color display •4X built-in CD, speaker, mic & midi •2 PCMCIA card slots •Touchpad pointing davica •Wireless ir ports •1 year warranty

$2499

| MODEL# | PROCESSOR | RAM | HD | DISPLAY | | PRICE |
|---|---|---|---|---|---|---|
| 450 | 486DX4/75 | 4MB | 340 | 10 4 | D/S Color | $1349 |
| 450T | 486DX4/75 | 4MB | 340 | 9 5" | Act Color | $1699 |
| 550 | PENTIUM®75 | 8MB | 524 | 10 4" | D/S Color | $1739 |
| 560CDT | PENTIUM®75 | 8MB | 1 2G | 10 4" | Act Color | $3299 |
| TM5000 | PENTIUM®75 | 8MB | 524 | 10 5" | D/S Color | $2299 |
| TM5000 | PENTIUM®75 | 8MB | 810 | 10 4" | Act Color | $2599 |
| TM5100 | PENTIUM®90 | 8MB | 1 2G | 10.4" | Act Color | $3099 |
| TM5200 | PENTIUM®120 | 8MB | 1 2G | 10 4" | Act Color | $4599 |

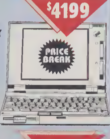
## Canon

| MODEL# | PROCESSOR | RAM | HD | DISPLAY | | PRICE |
|---|---|---|---|---|---|---|
| 350CD | 5X86/100 | 8MB | 540 | 10 4" | D/S Color | $2449 |
| NJC-100 | 486DX4/100 | 8MB | 810 | 10 4" | D/S Color | $2499 |
| NJCIIICX | PENTIUM ®90 | 8MB | 810 | 11 8" | ACT Color | $4599 |
| NJCIIICX | PENTIUM ®120 | 8MB | 1 2G | 11 8" | ACT Color | $5499 |
| LS200 | 486DX2/66 | 4MB | 340 | 11 3" | D/S Color | $1299 |
| LS200 | 486DX4/100 | 8MB | 510 | 11 3" | D/S Color | $1699 |

## IBM

**THINKPAD 760C COLOR NOTEBOOK**
•INTEL 90MHz PENTIUM® processor •8mb Ram expandable to 40MB •720MB removable hard-drive •1.44MB floppy drive •28.8bps fax/modem •Multimedia sound •2 PCMCIA slots •10.4" active color svga display •3 year warranty

$4199




**IBM 365CD COLOR NOTEBOOK**
•486DX4/75 MHz processor •8MB RAM expandable to 24MB •540MB HD •10.4" dual scan color display •Built-in 2x CD-ROM audio,speaker & microphone •Built-in trackpoint pointing device •1 year IBM warranty

$1989

| MODEL# | PROCESSOR | RAM | HD | DISPLAY | | PRICE |
|---|---|---|---|---|---|---|
| 760C | Pentium 90 | 8MB | 720 | 10 4 | Active Color | $4199 |
| 760C | Pentium 90 | 8MB | 720 | 12 1 | Active Color | $5299 |
| 760C | Pentium 120 | 8MB | 720 | 12 1 | Active Color | $5699 |
| 760CD | Pentium 90 | 8MB | 1 2G | 12 1 | Active Color | $5699 |
| 760CD | Pentium 120 | 8MB | 1 2G | 12 1 | Active Color | $5999 |
| 755CX | Pentium 75 | 8MB | 810 | 10 4" | Active Color | $6799 |
| 755CX | P-75 W/CD | 8MB | 540 | 10 4" | Active Color | $3499 |
| 701C | 486DX/50 | 8MB | 540 | 10 4 | Active Color | $2099 |
| 701C | 486DX/75 | 8MB | 540 | 10 4" | Active Color | $2399 |
| 701C | 486DX/75 | 8MB | 720 | 10 4" | Active Color | $2599 |
| 701CS | 486DX/75 | 8MB | 540 | 9 5" | Dual Scan | $2299 |
| 365 | 486DX4/75 | 8MB | 540 | 10 4" | Dual Scan | $1639 |
| 365 | 486DX4/75 | 8MB | 340 | 10 4' | Active Color | $1999 |
| 365CD | 488DX4/75 | 8MB | 540 | 10 4" | Dual Scan | $1989 |
| 365CD | 486DX4/75 | 8MB | 540 | 10 4" | Active Color | $2499 |

## SAMSUNG

**SENS 800**
•INTEL PENTIUM® 90 MHz •8MB RAM (Expandable to 36MB) •1.3GIG removable hd •Full audio w/built-in mic & speakerphona •10.4" active matrix display •Intrared data transfer •3 yaar warranty w/free 1 year exacutiva support program

$2999

| MODEL# | PROCESSOR | RAM | HD | DISPLAY | | PRICE |
|---|---|---|---|---|---|---|
| SENS 700 | 486DX4/100 | 8MB | 520 | 10 4' | Dual Scan | $1699 |
| SENS 700 | 486DX4/100 | 8MB | 810 | 10 4" | Active Color | $1999 |
| SENS 800 | Pentium®75 | 8MB | 520 | 10 4' | Dual Scan | $1999 |
| SENS 800 | Pentium®75 | 8MB | 810 | 10 4" | Active Color | $2499 |
| SENS 800 | Pentium®90 | 8MB | 1 3G | 10.4" | Active Color | $2999 |

## EPSON

**ACTION NOTE 650C 10.4" DUAL SCAN**
•486DX2/50 MHz processor •4MB RAM expandable to 20MB •260MB HD •10.3" dual scan color LCD display •Local bus video •2 type II or 1 type III PCMCIA slots •Built-in trackball •Nimh rechargeable battery •1 year Epson warranty

$999

| | | | |
|---|---|---|---|
| 650M | $949 | 890CX | $1949 |
| 880C | $1579 | 895C | NEW |
| 890M | $1199 | 895CX | NEW |
| | | 660CX | $1569 |

## PCMCIA CARDS

**Megahertz**

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**PCMCIA FAX/MODEM WITH X-JACK & CELLULAR CAPABLE**
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| 14 4K W/X-JACK | $79 |
| 28 8K W/X-JACK | $189 |
| Ethernet Modem Combo | $329 |
| 10 Base T W/X-Jack | $129 |
| 10 Base T W/X-Jack W/Coaxial | $149 |

**U.S. Robotics**

| | |
|---|---|
| Sportster PCMCIA 14 4 | $89 |
| Sportster PC V 34 28 8K | $209 |
| Sportster PC V34 W/Dataview | $249 |
| Courier DS 14 4K | $329 |
| Courier DS V34 28 8K | $379 |

**Xircom**

| | |
|---|---|
| PS-CE2-10BT/10BC | $129/$179 |
| PS-CE2-28BT/28BC | $439/$509 |
| CEM2-10BT/CEM2-10BC | $319/$369 |
| CM2B | $299 |
| DS-CT 10STP/10CTP | $369/$399 |
| CNW NWAD/E | $299 |

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| 28 8K Net Surfer | $179 |
| SOUND/ SCSI II Combo | $399 |
| WAV jammer Sound Card | $215 |
| Bus Toaster SCSCII | $184 |
| 14 4K Fax Modem | $89 |
| Ethernet LAN 10 BT | $134 |

**SIMPLE TECHNOLOGIES**

| | |
|---|---|
| 14 4K Communicator | $89 |
| 28 8K Communicator | $199 |
| Ethernet 10 Base T | $119 |
| SCSI PCMCIA Card | $99 |
| DC & 4 III HD 170MB | $369 |
| DC & 4 III HD 260MB | $449 |

$399

•260MB PCMCIA Typa III HD •Withstands 750GS •Low Power Consumption

| | |
|---|---|
| 14 4k Fax w/Voice | $149 |
| 28.8k v 34 w/Cellular | $299 |
| 16-bit Sound | $219 |
| Scsi-2 card | $149 |
| ETHERNET COMBO | $169 |

**TARGUS**

| | | |
|---|---|---|
| CN01 | Notebook Case | $34 |
| CF90 | Premier Fabric Case | $69 |
| CLN1 | Leather Notebook Case | $89 |
| CEL1 | Encore Leather Case | $149 |
| CS01 | Sherpa Case | $159 |
| CL85 | Business Traveler | $199 |
| CLP1 | Prestige Leather Case | $298 |

## SONY

**PrD-155SB KIT PORTABLE CD-RDM PLAYER**
•Double speed 300kb/sec transfer rate •Plays CD-audio, CD-ROM •PCMCIA connection•Sound box with integrated 16-bit stereo sound card

$499

## Panasonic

**KXL-D74D 4X PCMCIA CD-RDM**
•PCMCIA Type II connector •SCSI-2 interface •295ms •300kb/sec transfer rate •Uses 6 AA batterias •AC adaptar supplied •2 year warranty

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|---|---|
| 2X KXL-D720 | $249 |

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Microsoft Windows 95

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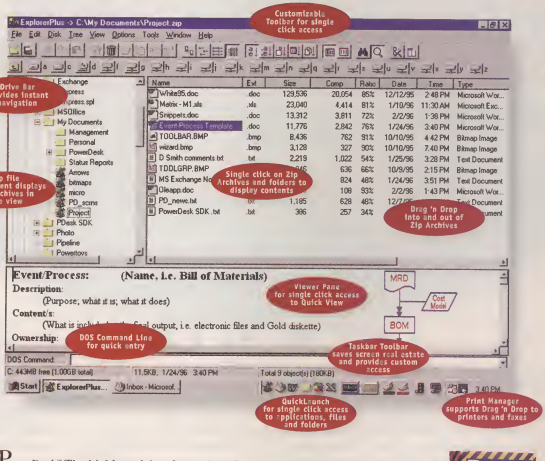
**Circle 149 on reader service card.**

# "POWERDESK: WHAT EXPLORER AND DASHBOARD SHOULD HAVE BEEN"

*— PC Magazine February 20, 1996*

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With ExplorerPlus™ (a beefed-up version of the Windows 95 Explorer) and the user-defined PowerDesk Toolbar, you'll have everything at your fingertips. Imagine that, immediate access and a place for everything. Very smart. Very fast. Very flexible.

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You could call PowerDesk the world's coolest Windows 95 enhancement utility. Which, as you can see, is exactly what people are saying.

***1-800-922-3383***

***Available at your local software store.***
***Visit our Web site for a free PowerDesk demo copy.***
***MicroHelp is at www.microhelp.com***

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**MicroHelp**

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**Circle 104 on reader service card.**

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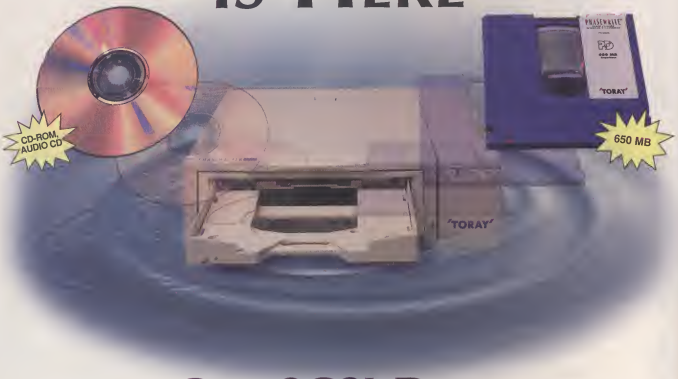
Windows 95 Compatible

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Designed for Microsoft Windows 95

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**Circle 119 on reader service card.**

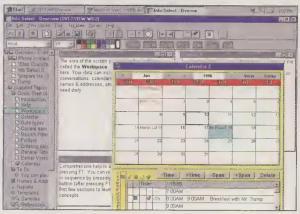
 *More reviews on page 198*

PERSONAL INFORMATION MANAGER

# Info Select 3.0

Imagine putting a search engine on that mountain of paper on your desk: You could find what you wanted instantly—without having to get organized first. Sound good? Try Info Select. The latest version (for Windows 95 or 3.x) of this personal information manager is more versatile than ever.

Info Select 3.0 organizes information as rigidly or as randomly as you like. And Info Select's search engine locates what you need in seconds, regardless of format.



In addition, this new version lets you categorize related notes by hierarchical topics and folders. Although it may take you a while to figure out these features, they're a powerful way to sort and group related information.

Like other PIMs, Info Select is well suited for maintaining contact lists that include notes and action items. However, it's also ideal for organizing ideas, conversations, e-mail, books, CDs, and just about anything else you want to keep track of. Plus, you can share Info Select files across a network, making it a serviceable and inexpensive groupware application.

Info Select's unusual interface might be daunting to first-time users, but a little experimentation quickly reveals the power of this program. If you want to get organized without having to change the way you think, pick up Info Select.

DYLAN TWENEY

**FILEBOX**

**Info Select 3.0 for Windows**

**Pros:** Rapid access to notes, contacts, and to-do lists.

**Cons:** Quirky interface; doesn't integrate with other applications.

**Verdict: A cult classic: Organize your life without rewiring your brain.**

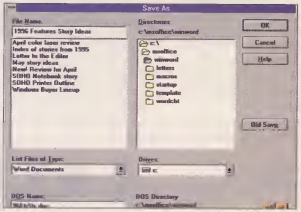
$89 est. street price
Micro Logic Corp.
(800) 342-5930, (201) 342-6518
*Reader Service No. 876*

FILE-NAMING UTILITY

# Long File Names

Those of us still using Windows 3.1 can't help but gaze longingly at the long filenames our colleagues with Windows 95 are allowed. Well, despair no longer: View Software has a utility to help the less fortunate among us: Long File Names (LFN) for Windows 3.1 and Windows 95.

It's a simple concept and a simple product: LFN alters your File Open, Save, and Save As dialog boxes so you can use as many as 255 characters per filename. As you type a filename, LFN creates a DOS-style filename, but all *you* see in the File Open dialog box are the long names you designated.




It's a good concept but a bit clunky as implemented. For example, the list of recently used files in your application's File menu shows the DOS filename, not the long name. We also had problems sharing files between Windows 3.1 and Windows 95 systems: The long names didn't transfer with the files.

If you don't share files often and are looking for an easier way to track them, LFN is a good solution. But for sharing files among systems, you're better off getting creative with those eight-character DOS filenames.

KYLA K. CARLSON

**FILEBOX**

**Long File Names for Windows 3.1 and Windows 95**

**Pros:** Easy, lucid file tracking for Windows 3.1 users.

**Cons:** Not a good solution if you frequently share files between systems.

**Verdict: Only Windows 3.1 users will benefit from LFN.**

$30 est. street price
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Circle 291 on reader set[illegible]

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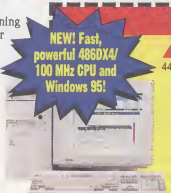

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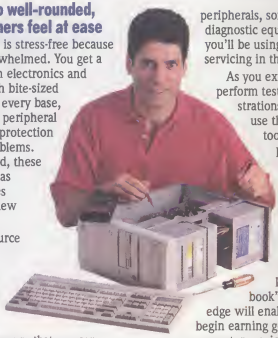

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**Circle 189 on reader service card.**

VISIONTEK™

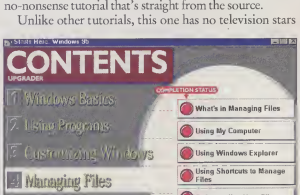
 *More reviews on page 204*

TRAINING CD-ROM

# Windows 95 Starts Here

You bought Windows 95. Feel a bit overwhelmed? Take the ten-minute introductory tour. Still overwhelmed? Try a training disc like Microsoft's Windows 95 Starts Here. Since Windows 95's debut last August, several companies have produced CD-ROMs to help new users and those who've upgraded from Windows 3.1 explore its new features. Windows 95 Starts Here is a no-nonsense tutorial that's straight from the source.

Unlike other tutorials, this one has no television stars or wacky jokes to help you through the program. But that's not to say it's not engaging. The disc is sprinkled with sound, animation, and interactive tutorials that show you what's in Windows 95 and how it works. The tutorial includes several sections, which cover everything from the mouse to the Microsoft Network. Windows newbies can start with the basics, while intermediate users can dig into new features, such as Windows Explorer and long filenames.




Power users may consider Windows 95 Starts Here an introduction to the obvious, but it's a good general overview of what's new. At times it resembles a high-tech filmstrip, but the hands-on demos and constant narration are easy to understand. If you—or someone you know—needs a Windows 95 primer, Microsoft's disc offers a straightforward multimedia tour of the operating system.

JULIE McCULLOUGH

**FILEBOX**

**Microsoft Windows 95 Starts Here**

**Pros:** Easy to use; Just follow the tour from start to finish, or jump right to any section.

**Cons:** A bit simplistic—the hard parts aren't that hard.

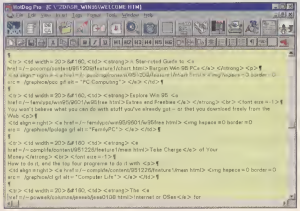
**Verdict: A good multimedia crash course in Windows 95.**

540 est. street price
Microsoft Corp.
(800) 426-9400, (206) 882-8080
*Reader Service No. 878*

HTML WEB-PAGE EDITOR

# HotDog Professional 2.0

Every time you turn around, somebody's posting a new HTML editor on the Web for building your own Web page. The trouble is, most of these programs do something that's anathema to anyone with experience creating Web pages: They dress up the HTML commands and hide them behind proprietary page-output viewers—as if that will spare us having to get in there and polish the code to a fine luster. That's hogwash. For serious HTML editing, you need Sausage Software's shareware HTML editor, HotDog Professional 2.0.




Although the $100 package can do colored tags, has a real-time output viewer, and provides quick-click shortcuts for inserting preformatted HTML code, it's really designed for serious hands-on coding. HotDog sports such power features as templates, Search and Replace across multiple documents, built-in spell-checking, an HTML syntax checker, HTML import and export conversion, multiple levels of undo, and a useful set of configuration options.

On the downside, HotDog is unreliable. It occasionally has trouble with its own screen updating, and it doesn't support long filenames in this release, although a 32-bit version is on the way. Even so, HotDog is the best HTML editor on the market. Download a free 30-day trial version from Sausage Software's Web site (http://www.sausage.com), or from our live link at www.pccomputing.com.

SCOT FINNIE

**FILEBOX**

**HotDog Professional 2.0**

**Pros:** Straightforward Web-page coding features.

**Cons:** Has problems updating screens; doesn't support long filenames.

**Verdict: Brute-force, hands-on HTML editing for pros. The most powerful HTML editor.**

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http://www.sausage.com
*Reader Service No. 879*

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Swan's Family Series provides a choice of systems tailored for multimedia at a price any family can afford. PC World's November 1995 "Top 20" review calls Swan's Pentium 75 Family system an *"uncommonly good package"*, and *"a solid performing multimedia PC for a great price."* We've lowered prices even more, added a sensational new video card and exciting new software, for an even better package.

- 75MHz Intel Pentium Processor
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- 256K External Cache
- **6X Multisession CD-ROM Drive**
- PCI Local Bus with Enhanced IDE
- 3.5" Floppy Drive
- 15" .28mm Flat Screen Color Monitor
- 14.4Kbps Internal Fax/Modem
- Creative Labs Vibre 16™ 16-bit Stereo SoundBlaster™ Compatible Sound Card
- Amplified, Shielded Stereo Speakers
- 2 Fast Serial Ports, 1 Parallel Port
- **8 Popular Home/Family CD-ROM Titles**
- Microsoft Encarta™
- **MS-DOS® and Microsoft® WFW 3.11 or Microsoft® Windows® 95 (installed)**
- Keyboard and Mouse, Microphone and Headset
- 7 Bay Desktop Case
- One Year On-site Parts and Labor Warranty

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| | |
|---|---|
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| Family 120MHz | $1949 |
| Family 133MHz | $2049 |
| Family 150MHz | $2149 |
| Family 166MHz | $2349 |

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- **8MB DRAM, Expandable to 40MB**
- 540MB EIDE Hard Drive, Upgradable to 1GB
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- 32-bit PCI Local Video Bus, 1MB DRAM
- **256K Synchronous Pipeline Burst Cache**
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- **Built-in Stereo Speakers**
- Built-in Microphone
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- Carrying Case
- One Year Factory Parts and Labor Warranty

**$2399** (Dual-Scan)

| | |
|---|---|
| P100MHz Active-Matrix | $2699 |
| P75MHz deduct | $100 |

## SWANNOTE-PLUS UPGRADES†

| | |
|---|---|
| Memory - 8MB to 16MB | $379 |
| Memory - 8MB to 24MB | $769 |
| Hard Drive - 540MB to 810MB | $100 |
| Hard Drive - 540MB to 1.0GB | Call |
| NiMH Battery Pack | $75 |
| Second NiMH Battery Kit | $105 |
| Adaptec AirPort 2000 | $99 |
| Deluxe Carrying Case | $69 |
| PCMCIA 14.4Kbps Fax/Modem | $119 |
| Extended Service Plan | $109 |
| **Mini Docking Station** | **$179** |

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- Microphone In, Speaker Out
- MIDI, Joystick Port
- Two Stereo Speakers

## DESKTOP UPGRADES†

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|---|---|
| Memory - 8MB to 16MB | $400 |
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| Fax/Modem - 14.4Kbps Internal | $69 |
| Fax/Modem - 28.8Kbps Internal | $149 |
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- Amplified, Shielded Stereo Speakers
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SWAN TECHNOLOGIES corporation

Circle 166 on reader service card.

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**Circle 238 on reader service card.**

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PC MAGAZINE EDITORS' CHOICE

WINDOWS 1996 WIN 100

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Service fees apply beyond the first 14 free days. * Use of Netscape and other major Web browsers is limited to Windows users only. Valid major credit card required. Phone charges may apply. A PSINet Company. ©1996 PSINet, Inc.

 *More reviews on page 210*

DRAWING

# Windows **Draw** 4.0

Just because you wouldn't call yourself an artist doesn't mean you can't dabble in the fine art of PC graphics. Micrografx's Windows Draw 4.0 for Windows 95 and Windows NT is a simple yet rich collection of graphics tools that lets you convert scanned photos to "charcoal" sketches, design one-of-a-kind flyers or party invitations, or simply turn your doodles into digital masterpieces.

Windows Draw 4.0 consists of three programs that work together: Draw 4.0 lets you create drawings and diagrams; Photo Magic lets you scan, edit, and doctor photo images; and ABC Media Manager is the fastest way to browse and search the impressive collection of clip art, fonts, and photographs included on the CD-ROM. Each of the pieces is as easy to learn as Windows 95's Paint program, but Draw's tools are much more powerful.

For example, Draw 4.0 includes over 30 drawing tools (including several that let you create 3-D effects) and enough tricks to fool anybody into thinking you're a pro. Hate to draw by hand? Use Photo Magic to open photos you've scanned or downloaded. You'll also find drag-and-drop shapes for creating diagrams, and 150 templates to get you started creating calendars, business cards, letterhead, and other home and office essentials.

Talented artist or not, if you want to draw, design, paint, and dress up photos on your PC, Windows Draw 4.0 for $49 is a bargain by any measure. **WENDY TAYLOR**

**FILEBOX**

**Windows Draw 4.0**

**Pros:** Easier to use than the Paint program in Windows—and a lot more powerful.

**Cons:** Experienced graphics artists should look elsewhere.

**Verdict: The easiest all-in-one graphics program for home and office.**

$49 est. street price
Micrografx
(214) 234-1769 (800) 676-3110
*Reader Service No. 880*

ENTERTAINMENT CD-ROM

# Florida State **Football**

Long after you graduate from college, certain memories can still bring tears to your eyes. Like Florida State University pounding the Gators, or squashing the Hurricanes, or pounding the Gators again. The ABC Sports Presents Florida State Football CD-ROM uses stunning multimedia video and sound to take you back a few years to that special football game.

ABC sportscaster Keith Jackson leads you through the locker room, stadium, coach's office, and fan club. Dozens of full-motion video clips of special moments are at your fingertips. Watch FSU win the 1993 National Championship over Nebraska—over and over again. Journey back in time to see Neon Deion Sanders return an interception for a 100-yard touchdown.

In addition to video, you'll find the team's complete history and records, including rosters, schedules, and players, all in a searchable database. Feeling nostalgic? Step into the fan club, where you'll find even more videos and a jukebox playing the team's fight song and war chant.

ABC Sports Presents Florida State Football has a slick and easy-to-use interface. Seconds after you install it, you'll be reliving those unforgettable college memories. Not a fan of Florida State? No worries. There are also versions for Notre Dame, Michigan, Ohio State, Penn State, and University of Southern California. **ADAM MEYERSON**

**FILEBOX**

**ABC Sports Presents Florida State Football**

**Pros:** Action-packed videos of FSU crushing the Gators.

**Cons:** Could use more video of FSU crushing the Gators.

**Verdict: The best way to relive some of college football's greatest moments.**

$45 est. street price
Stella Interactive
(800) 619-4691, (619) 431-8221
*Reader Service No. 881*

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PC World 20 Best Upgrades

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If you're about to invest in a new multi-tasking operating system like Windows 95 or Windows NT Workstation, experts say it may be time to invest in APC protection. Why? Because bad power is the largest single cause of data loss, and on a multi-tasking system, your vulnerability is multiplied. When full protection is as affordable as a new mouse, it just doesn't make sense to leave your premium machine unprotected.

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Supports Windows, Windows 95, WinNT, Windows for Workgroups, and OS/2.

*You get safe automatic shutdown (whether you're there or not), power event recording for power quality analysis, real-time display of UPS status, and certified Windows 95 Plug & Play compatibility for easy installation.*

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All in all, you can't make a bad choice when you choose the company that protects more PC's than all other UPS vendors combined: APC.

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Circle 136 on reader service card.

# "TriSpectives...deserves the killer-app label!"

Stanford Diehl, **BYTE Magazine,** October 1995

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EDITORS' CHOICE AWARD

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**Circle 296 on reader service card.**

# EVEREX STEP NOTE PLUS

## Pentium® processor, multimedia solution

The Everex STEP Note Plus is a Pentium® Processor-based, multimedia notebook that gives users portability with excellent performance. Built-in 16-bit stereo sound, speakers and microphone, plus an optional CD-ROM drive or second battery in place of the removable floppy drive, make the STEP Note Plus a true multimedia road warrior. The removable hard drive allows for easy upgrades and data security. The STEP Note Plus comes with a two year warranty[1], including a 48-hour hot swap for the first year, for additional peace of mind.

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PC WORLD

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PCI

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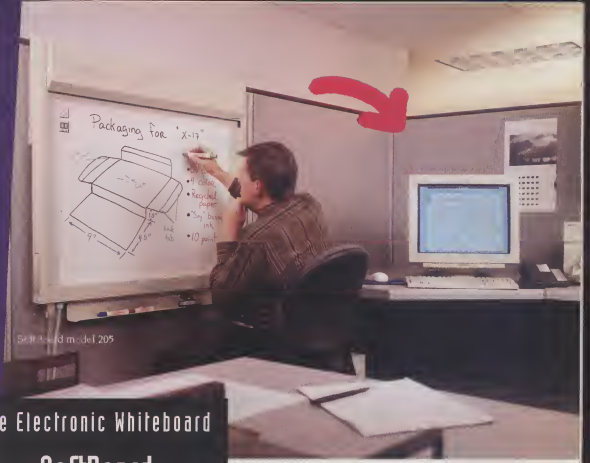


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# SoftBoard

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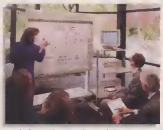

Mobile SoftBoard model 203

SoftBoard model 201 using SBRemote conferencing software

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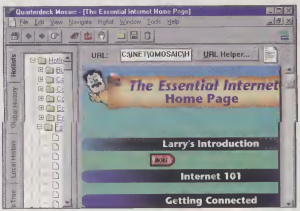
**Circle 328 on reader service card.**

MULTIMEDIA INTERNET TUTORIAL

# Essential Internet

Who's afraid of the big, bad Internet? Apparently a lot of newbies, judging from the glut of learn-all-about-the-I-Way CD-ROM titles on dealers' shelves. Quarterdeck's entry into this genre is a gem called Larry Magid's Essential Internet. If you can stomach Magid's cutesy cartoon world, there's no better multimedia Internet intro.




The CD-ROM includes more than 40 short animations and dozens of articles that explain the Internet. Magid, a syndicated technology columnist, explains complex concepts like FTP and Telnet in plain English.

To get hands-ons experience, access Essential Internet using Quarterdeck's Mosaic, a Web browser that comes bundled with the CD. You also get a decent e-mail program (Quarterdeck's Message Center); Apple's QuickTime for Windows movie viewer; and Adobe's Acrobat Viewer; and Quarterdeck's Location Manager, which includes service offers from Internet service providers. This collection of access software and multimedia tutorials for mastering Internet basics is ideal for I-Way neophytes. RICH SCHWERIN

FILEBOX

**Larry Magid's Essential Internet**

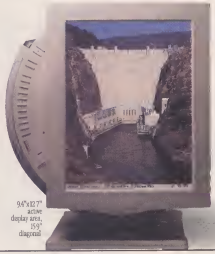
**Pros:** Multimedia Internet introduction coupled with all the I-Way tools you need.

**Cons:** Cute cartoons and some oversimplification of concepts can be a turnoff.

**Verdict: A complete I-Way primer for Internet newbies.**

$19 est. street price
Quarterdeck Corp.
(800) 683-6696, (310) 309-3700
*Reader Service No. 882*

The Monitor that Shows You the Whole Dam Thing.

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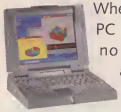

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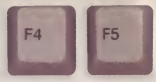


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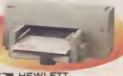

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| CorelDRAW V5 0 to V6 0 WIN95 upg CD | 225.62 |
| CorelDRAW V6 0 WIN95 CD | 429 25 |
| CorelFLOW V3 0 WIN95 CD | 126.71 |
| Claris FileMaker Pro V3 0 WIN95 | 179 52 |
| Delrina Communications Suite WIN95 CD | 98 09 |
| Delrina WinFAX PRO V7 0 WIN95 | 77 56 |
| Delrina WinFAX PRO V7 0 WIN95 CD | 78 31 |
| Inset Sys HiJaak95 V1 0 WIN95 | 48 16 |
| Lotus SmartSuite 96 WIN95 | 379 21 |
| Lotus SmartSuite 96 WIN95 CD | 379 21 |
| Lotus SmartSuite 96 WIN95 upg | 188 96 |
| Lotus SmartSuite 96 WIN95 upg CD | 188 97 |
| Lotus Word Pro 95 WIN95 CD | 94 09 |
| Lotus Word Pro 96 WIN95 | 96 89 |
| Microcom Carbon Copy V3 0 WIN95 | 84 21 |
| Microsoft 3D Movie Maker WIN95 | 38 38 |
| Microsoft Access WIN95 | 293 00 |
| Microsoft Access WIN95 upg | 93 14 |
| Microsoft Bookshelf WIN95 CD | 48 39 |
| Microsoft Cinemania '96 WIN95 CD | 28 48 |
| Microsoft Encarta '96 World Atlas WIN95 CD | 4[illegible] 82 |
| Microsoft Excel WIN95 | 293.00 |
| Microsoft Excel WIN95 upg | 93 14 |
| Microsoft Fury3 WIN95 CD | 35 47 |
| Microsoft Money for WIN95 | 29 [illegible]6 |
| Microsoft Money WIN95 CD | 29 56 |
| Microsoft Office Pro w/Access WIN95 upg | 309 00 |
| Microsoft Office Pro w/Bkshelf WIN95 CD | 5[illegible]2 50 |
| Microsoft Office Pro w/Bkshelf WIN95 upg CD | 309.00 |
| Microsoft Office Pro WIN95 | 542.50 |
| Microsoft Office Std WIN95 | 443 36 |
| Microsoft Office Std WIN95 CD | 451 78 |
| Microsoft Office Std WIN95 upg | 221 00 |
| Microsoft Office Std WIN95 upg CD | 221 00 |
| Microsoft Plus! WIN95 | 45 26 |
| Microsoft Plus! WIN95 CD | 45 26 |
| Microsoft Powerpoint WIN95 | 299 35 |
| Microsoft Powerpoint WIN95 upg | 93 14 |
| Microsoft Project WIN95 | 416.12 |
| Microsoft Project WIN95 upg | 131 04 |
| Microsoft Publisher CD Deluxe WIN95 | 68.24 |
| Microsoft Visual C++ Subscription WIN95 | 449 82 |
| MS Visual C++ Subscription WIN95 upg CD | 307.40 |
| Microsoft Windows 95 | 179 93 |
| Microsoft Windows 95 upg | 89 95 |
| Microsoft Windows 95 upg CD | 88 95 |
| Microsoft Word WIN95 | 293 00 |
| Microsoft Word WIN95 upg | 95 01 |
| MS Word/Publisher Value Pack WIN95 CD | 95 48 |
| Microsoft Works w/Bookshelf WIN95 CD | 67.12 |
| Microsoft Works WIN95 | 45.56 |
| NCD PC-Xware for WIN95 upg | 78 69 |
| Quarterdeck Clean Sweep V2 0 WIN95 | 27 74 |
| Quarterdeck QEMM V8 0 WIN95/WIN3 1 | 82.79 |
| SPC Harvard Graphics V4 0 WIN95 upg | 88.85 |
| Saber LAN Workstation V5 0C WIN95 | 58 81 |
| Stacker V4 1 WIN95 | 51.02 |
| Starfish Sidekick WIN95 | 47.07 |
| Symantec Norton AntiVirus WIN95 | 72 87 |
| Symantec Norton AntiVirus WIN95 upg | 32 46 |
| Symantec Norton Utilities WIN95 | 116 90 |
| Symantec Norton Utilities WIN95 upg | 58.55 |
| Symantec pcANYWHERE32 WIN95/NT | 132.68 |
| Symantec pcANYWHERE32 WIN95/NT upg | 63 33 |
| Symantec Norton Navigator WIN95 | 96 38 |
| Symantec Norton Navigator WIN95 trade-up | 39.56 |
| Visio Technical V4 0 WIN95 | 259.27 |
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| Etherlink III, 5 pack 10BT and AUI (3C509B-TP-5PK) | $448.41 | CDW 48607 |
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|---|---|---|
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| 10 User CD | 1489 36 |
| 25 User CD | 2204 36 |
| 50 User CD | 2973.46 |
| 100 User CD | 4153.48 |

**Netwere V4.1 upgrede**

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| 5 User to 5 User CD | 268.86 |
| 5 User to 10 User CD | 1015.68 |
| 5 User to 25 User CD | 1652.37 |
| 10 User to 10 User CD | 535 38 |
| 10 User to 25 User CD | 1173 57 |
| 10 User to 50 User CD | 1665.17 |
| 25 User to 25 User CD | 803.63 |
| 25 User to 50 User CD | 1492 77 |
| 25 User to 100 User CD | 2553.00 |
| 50 User to 50 User CD | 1069 28 |
| 50 User to 100 User CD | 2131.17 |
| 100 User to 100 User CD | 1492 77 |

**Netwere V3.12**

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|---|---|
| 5 User 3 5" | 658.33 |
| 10 User 3 5' | 1489 36 |
| 25 User 3 5" | 2204.38 |
| 50 User 3 5" | 2973.46 |
| 100 User 3.5" | 4153.48 |

### Microsoft Back Office

**Microsoft Windows NT**

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|---|---|
| Windows NT Server, CD | 816 28 |
| Single client license | 38 79 |
| 20 client license pack | 493.85 |

**Microsoft SQL Server**

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|---|---|
| SOL Server, CD | 893.65 |
| SOL Server upgrade, CD | 451 03 |
| Single client license | 133 04 |
| 20 client license pack | 2132.77 |

**Microsoft Systems Mgmt Server**

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|---|---|
| SMS Server, CD | 573 00 |
| SMS Server upgrade, CD | 573 55 |
| Single client license | 48 76 |

**Microsoft SNA Server**

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|---|---|
| SNA Server, CD | 352.84 |
| Single client license | 56 04 |
| 20 client license pack | 671.42 |

**Microsoft Mail Server**

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|---|---|
| Mail Server CD | 239 78 |
| Mail Server upgrade, CD | 291 39 |
| 5 client license pack | 236.11 |

### 3Com

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|---|---|
| 3C509B Etherlink III coax | 113.71 |
| 3C509B Etherlink III coax 10BT | 105.23 |
| 3C509B Etherlink III 10BT 5pk | 422.95 |
| 3C509B Etherlink III 10BT + AUI | 109.58 |
| 3C509B Etherlink III 10BT + AUI 5pk | 448.41 |
| 3C509B Etherlink III combo | 125.89 |
| 3C509B Etherlink III combo 5pk | 519.87 |
| 3C509B Etherlink III PCI 10BT | 126 10 |
| 3C509B Etherlink III PCI combo | 169 10 |
| 3C595 Fast Etherlink PCI 10/100BT | 169.25 |
| 3C16170 Linkbuilder TP/12 port | 319 34 |
| 3C18670 Linkbuilder FMSII 12 port | 538.34 |

### Artisoft

| | |
|---|---|
| NodeRunner/SI 2000A | 87 13 |
| NodeRunner/SI 2000T | 73.62 |
| NodeRunner Pro combo | 79 45 |
| T-Runner 8-port II 10BT | 157 50 |
| T-Runner II 16-port 10BT | 314 74 |
| Simply LANtastic starter kit | 163.79 |
| LANtastic V6 0 | 79 50 |
| LANtastic V6 0 5 user | 329.87 |
| LANtastic V6.0 Starter Kit, coax | 229 13 |
| LANtastic V6 0 add-on kit, coax | 117 86 |
| LANtastic V6 0 add-on kit, 10BT | 117 86 |

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### ASP

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|---|---|
| JetLAN/P Plus pocket server | 283.47 |
| Intelligent AutoSwitch, 2 comp to 1 printer | 28.50 |
| Intelligent AutoSwitch, 4 comp to 1 printer | 39.55 |
| SNAP starter kit-2 computers 1 printer | 119 10 |
| SNAP add-on transmitter | 49.50 |

### Bay Networks

| | |
|---|---|
| SynOptics System 800 10BT 8-port hub | 196.87 |
| SynOptics System 800M 10BT 8-port hub | 529.09 |

### IBM

| | |
|---|---|
| Token Ring Auto Adapter 18/4 ISA | 238.57 |
| IBM Token Ring MAU | 398.42 |

## NETWORKING PRODUCTS

### intel

| | |
|---|---|
| EtherExpress PRO/100Mbps PCI | 219.19 |
| EtherExpress PRO/100Mbps PCI 5pk | 998 36 |
| EtherExpress PRO/100Mbps EISA | 246 52 |
| EtherExpress PRO/10 Flsh 10BT | 108 01 |
| EtherExpress PRO/10 Flsh 10BT 5pk | 419 96 |
| EtherExpress PRO/10 Flsh combo | 115 07 |
| EtherExpress PRO/10 Flsh combo 5pk | 472 00 |
| EtherExpress 16 10BT | 103 04 |
| EtherExpress 16 10B T 5pk | 465 47 |
| EtherExpress MCA 10BT | 166 52 |
| EtherExpress 16 combo | 122 33 |
| EtherExpress 16 combo 5pk | 549.64 |
| EtherExpress EISA, coax | 428.17 |
| EtherExpress Flsh combo | 129.79 |
| EtherExpress Flsh combo 5pk | 891.05 |
| TokenExpress PRO ISA LAN adapter | 249.84 |
| NetportExpress EL Ethernet | 376.90 |

### SMC

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|---|---|
| EtherEZ 10BT | 94 47 |
| EtherEZ coax | 94.47 |
| EtherEZ combo | 107 06 |
| EtherPower 10/100BT PCI | 149.50 |
| EtherPower 10/100BT PCI 5pk | 734.62 |
| EtherPower 10BT PCI | 125.68 |
| EtherPower 10BT 5pk | 525.98 |
| EtherPower coax PCI | 149 97 |
| EtherPower coax PCI 5 pk | 715.53 |
| TigerHub TP6 6 port + AUI | 184.24 |
| TigerHub TP6B 6 port + BNC | 179.97 |
| TigerHub TP12 12 port + AUI | 344 98 |
| 3608 Ethernet 8 port hub 10BT | 298.85 |
| 3512 Ethernet 12+2 port hub 10BT | 548 55 |
| PC600WS ARCNET coax | 119.93 |
| ARCNET 8 port active hub coax | 229 41 |
| TokenCard Elite 16/4 | 221.27 |

### THOMAS•CONRAD

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|---|---|
| TC6245 ARCNET coax | 179.99 |
| TC5055 Ethernet 8 port hub 10BT | 338.28 |
| TCVG045 AnyLAN ISA adapter | 214 38 |
| TCVG047 AnyLAN EISA adapter | 236.69 |

### TERMINALS

| | |
|---|---|
| Link MC80 14" color | 469 33 |
| Link MC5 amber/green/white | 273.65 |
| Wyse 55 amber/green/white | 219.97 |
| Wyse 60 amber/green/white | 336.64 |
| Wyse 160 amber/green/white | 333.13 |

### Xircom

| | |
|---|---|
| PE310BC pocket Ethernet coax | 317.28 |
| PE310B2 pocket Ethernet coax | 277.51 |
| PE310BT pocket Ethernet 10BT | 277 51 |
| PT316CTP pocket Token Ring III | 475.83 |
| PPX03 Parallel port multiplexor | 77 80 |

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### COLORADO MEMORY SYSTEMS INC.

| | |
|---|---|
| Jumbo 350 internal | 119.63 |
| Jumbo 1400 internal | 228.15 |
| Trakker 350MB parallel port w/tape | 176.67 |
| T1000E 800MB parallel port | 216.57 |
| T1000 800MB Travan w/tape | 179.76 |
| PowerTape 2GB external w/tape | 1097.99 |

### CONNER

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|---|---|
| Tape*Stor 800MB Travan internal | 159.74 |
| Tape*Stor 800MB Travan parallel | 257.15 |
| Tape*Stor 850MB internal | 219 87 |
| Tape*Stor 850MB parallel | 365.25 |
| Tape*Stor 3200MB internal | 283.47 |
| Tape*Stor 4GB internal IDE | 449.67 |

### iomega

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|---|---|
| Zip drive 100MB parallel interface | 199.00 |
| Zip drive 100MB SCSI interface | 199.00 |
| Zip disks 100MB, 3pk | 49.00 |
| Ditto 420MB tape drive internal | 99 00 |
| Ditto Easy 800MB Travan tape drive external | 149 00 |
| Ditto Easy 800MB Travan tape drive internal | 149.00 |

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### MICROSOLUTIONS

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|---|---|
| Backpack 3 5" 1 44MB floppy parallel | 148 32 |
| Backpack 800TD 800MB Travan parallel | 167 26 |

### EXABYTE

| | |
|---|---|
| EXB-8700 8MM | 1963 75 |
| EXB-8505XL 7GB tape backup internal | 1999.87 |

### SyQuest

| | |
|---|---|
| EZ135 135MB internal IDE interface | 194.42 |
| EZ135 135MB external SCSI interface | 229.90 |
| EZ135 135MB cartridge | 21 49 |
| EZ135 135MB external parallel interface | 239 83 |

## MULTIMEDIA AND CD

***Creative Labs***

| | |
|---|---|
| Discovery CD 4x PnP multimedia kit | 314.42 |
| Blaster CD 4x kit | 127.24 |
| Sound Blaster Value CD 4x kit | 287 72 |
| Phone Blaster 14 4K internal w/software | 185.18 |
| Sound Blaster 16 value edition (IDE) | 89 96 |
| Sound Blaster 18 SCSI-2 | 187.90 |
| Sound Blaster AWE32 PnP | 225 41 |

| | |
|---|---|
| ADS VGA to TV Elite internal | 134 89 |
| ADS VGA to TV Elite external | 198.83 |
| Advent PP570 speakers 35W | 245,97 |
| Advent PP270 speakers 25W | 118 70 |
| Advent PP170 speakers 5W | 67 35 |
| Advent PP622 spkrs/subwoofer | 166 64 |
| Altec Lansing ACS500 surround system | 308.19 |
| Connectix QuickCam for Windows | 98 57 |
| Diamond Multimedia Kit ULTRA 8X CD | 519 47 |
| Diamond Multimedia Kit 4400 4X CD int | 287 86 |
| Jensen JPS35 speakers 5W | 54.88 |
| Jensen JPS45 speakers 10W | 69 93 |
| Microsolutions 4X CD parallel | 354.68 |
| Microsolutions 4X CD parallel w/sound | 459 09 |
| Minolta Snappy video still capture | 198.84 |
| NEC 6Xe | 515 86 |
| NEC 6Xi | 339.43 |
| NEC 4Xc, 4X, 7 disc changer | 339 43 |
| NEC 4x4, 4X, 4 disc changer | 269.88 |
| Pioneer DRM624X 4X, 6 disc changer | 304 90 |
| Plextor 6X Internal | 366.23 |
| Sigma Designs RealMagic MPEG | 366 07 |
| Sony PRD-150 portable PCMCIA Discman® | 349 32 |
| Sony 4X internal w/IDE interface | 105.30 |
| Sony 4X internal w/SCSI-2 interface | 299.80 |
| Toshiba 3701B SCSI 6 7X internal | 349 99 |
| Turtle Beach Tropez | 193 67 |
| Turtle Beach TBS-3001 4X 3-speed | 179 98 |

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### ALPS

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|---|---|
| Portable GlidePoint PS/2 | 53.79 |
| Desktop Glidepoint | 87.19 |
| GlidePoint Windows 95 keyboard | 87.12 |

### CalComp

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|---|---|
| DB III 12X12 4 button | 248.94 |
| DB III 12X12 16 button | 249.94 |
| Drawing Slate II 12X12 4 button cordless | 219.81 |

### EPSON

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|---|---|
| PhotoPC digital camera | 499 00 |
| ActionScanning System II | 479 84 |
| ES-1000C | 735.78 |
| ES-1200-ProPC | 1122.02 |

### HEWLETT PACKARD

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|---|---|
| ScanJet 4S | 318.55 |
| ScanJet 4C | 997.02 |
| ScanJet 4C document feeder | 477.55 |

### LOGITECH

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|---|---|
| PageScan Color Scanner | 359.22 |
| TrackMan Marble | 67.65 |
| TrackMan Live! cordless pointer | 123.55 |

### MICROTEK

| | |
|---|---|
| Scanmaker E3 color | 379.77 |
| Scanmaker IIHR color w/Adobe Photoshop | 749 98 |
| ScanMaker III color | 2024.37 |
| Scanmaker 35T slide scanner | 692.56 |

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### Summagraphics.

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|---|---|
| Summasketch III 12 X 12 16 button | 243.13 |
| Summasketch III 18 X 12 4 button | 488.33 |

### UMAX

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|---|---|
| Vista-S6 PCPRO | 657.05 |
| Vista-S6 PCLE2 | 569.27 |
| Vista-S12 PCPRO2 | 769.89 |
| Vista-T630 PCSoho | 439.96 |

### VISIONEER

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|---|---|
| PaperPort VX | 366 50 |

## MONITORS

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|---|---|
| Mag Innovision DX1495 PnP 14" | 268 34 |
| Mag Innovision DX1595 PnP 15" | 379 94 |
| Mag Innovision MXP17F | 863 61 |
| Mag Innovision DX1795 PnP 17" | 715 70 |
| Mag Innovision MX21F | 1689.47 |
| Magnavox CM2089 14" .28 | 234.48 |
| Magnavox CM2099 14" 28 NI | 248.85 |
| Magnavox CM2015 15" 28 1024 | 322.79 |
| Magnavox CM1215 15" 28 1280 | 388 62 |
| Magnavox CM4018 17" 28 | 652.84 |
| Magnavox 20CM64 20" 28 1280 | 1087.09 |
| Magnavox CM5600 20" 28 1600 | 1322.82 |
| NEC XV15+ 15" | 473.13 |
| NEC XV17+ 17" | 799.84 |
| NEC XE15 15" | 572 34 |
| NEC XE17 17" | 999 50 |
| NEC XE21 21" | 1669.34 |
| NEC XP17 17" | 1024 64 |
| NEC XP21 21" | 1622 59 |
| Samsung 15GLi 15" | 469 00 |
| Samsung 17GLi 17" | 749.00 |
| Samsung 17GLsi 17" | 949.00 |
| Sony 15SFII 15" PnP | 499 94 |
| Sony 15SX 15" PnP | 419 85 |
| Sony 17sell 17" | 1067.54 |
| Sony 17SFII 17" PnP | 877 30 |
| Sony Multiscan 20sfII PnP | 1797.50 |
| ViewSonic 15GS 15" | 435.20 |
| ViewSonic 17GS 17" | 709.84 |
| ViewSonic 21PS 21" | 1699 27 |

## VIDEO CARDS

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|---|---|
| ATI Graphics Xpression ISA 2MB | 189.36 |
| ATI Graphics Xpression ISA 1MB | 144 77 |
| ATI Graphics Xpression VLB 2MB | 189 36 |
| ATI Graphics Xpression PCI 2MB | 189.36 |
| ATI Graphics Pro Turbo ISA 2MB | 319.97 |
| ATI Graphics Pro Turbo VLB 2MB | 319.97 |
| ATI Graphics Pro Turbo PCI 2MB | 319.97 |
| ATI Graphics Pro Turbo PCI 4MB | 449.68 |
| Diamond SpeedStar Pro ISA 1MB | 95.69 |
| Diamond SpeedStar 64 ISA 2MB | 199 00 |
| Diamond SpeedStar 64 ISA 1MB | 153 55 |
| Diamond Stealth Video VLB 2MB | 239 21 |
| Diamond Stealth Video PCI 2MB | 237 89 |
| Diamond Edge 2120XL, 1MB DRAM | 267 67 |
| Diamond Edge 2200XL, 2MB DRAM | 326 11 |
| Diamond Edge 3240XL, 2MB VRAM | 419 22 |
| Diamond Edge 3400XL, 4MB VRAM | 569 47 |
| Intel Smart Video Recorder Pro | 398.99 |
| Matrox Millennium PCI 2MB WRAM | 316 59 |
| Matrox Millennium PCI 4MB WRAM | 439 88 |

## INTEL OVERDRIVES

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| Intel OverDrive DX2/66 | 127.34 |
| Intel OverDrive DX4/75 | 145.85 |
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| T2130CT DX4/75 500MB act color | 2147 21 |
| Portege 610CT 5/90 720MB act color | 3888 98 |
| 410CS 5/90 8MB 772MB pas color | 3269.93 |
| 410CDT 5/90 8MB 772MB act clr CD | 4439 87 |
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| Ascentia J30 5/100 8MB 800MB act color | 3128.48 |
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| Ascentia 950N 5/90 8MB 800MB dual scan | 2997.07 |
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| 822-5/100 16MB 1 2GB 28 8K bps 6XCD | 1989 85 |
| 824-5/133 16MB 1 6GB 28 8K bps 3disc6XCD | 2258 66 |
| 826-5/150 16MB 2 1GB 28 8K bps 3disc6XCD | 2589 55 |
| 828-5/168 16MB 2 1GB 28 8K bps 3disc6XCD | 2778.51 |

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| Contura 420C 4/75 8MB 420MB dual scan | 2116.97 |
| Contura 420CX 4/75 8MB 420MB act color | 2598 28 |
| Contura 430C 4/100 8MB 720MB dual scan | 2408 00 |
| Contura 430CX 4/100 8MB 720MB act color | 2979.40 |
| LTE Elite 4/75C 4/75 8MB 510MB dual scan | 3169.00 |

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**ProLinea Series Desktops**

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| ProLinea 575e 5/75 8MB 1 06GB | 1586 88 |
| ProLinea 5100e 5/100 8MB 630MB | 1655 67 |
| ProLinea 5100e 5/100 8MB 1 06GB | 1816 23 |
| ProLinea 5120e 5/120 8MB 630MB | 1878.95 |
| ProLinea 5120e 5/120 8MB 1 06GB | 2037 64 |
| ProLinea 575 5/75 8MB 630MB | 1605.00 |
| ProLinea 575 5/75 16MB 1 08GB | 2102 00 |
| ProLinea 590 5/90 8MB 630MB | 1859 00 |
| ProLinea 590 5/90 16MB 1 08GB | 2357 00 |
| ProLinea 5100 5/100 8MB 630MB | 1888 00 |
| ProLinea 5100 5/100 16MB 1 08GB | 2385 00 |
| ProLinea 5120 5/120 16MB 1 08GB | 2667.00 |

**ProLinea Series Mini-Towers**

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| ProLinea 575 MT 5/75 16MB 1 08GB | 2149 81 |
| ProLinea 5100 MT 5/100 16MB 1 08GB | 2435 93 |
| ProLinea 5133 MT 16MB 1 08GB | 2939 98 |

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| Deskpro 575 5/75 16MB 1 08GB | 2359.85 |
| Deskpro 590 5/90 8MB 830MB | 2119 18 |
| Deskpro 590 5/90 16MB 1 08GB | 2618 30 |
| Deskpro 5100 5/100 8MB 630MB | 2118 98 |
| Deskpro 5100 5/100 16MB 1 08GB | 2616 54 |
| Deskpro 5120 5/120 16MB 1 08GB | 2928 85 |
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| Deskpro 590 MT 5/90 16MB 1 08GB | 2656 00 |
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| 701C DX4/75 540MB act color | 2849.00 |
| 760C 5/90 8MB 720MB 10 4 act color Selecta | 5349.00 |
| 760C 5/90 8MB 720MB 12 1 act color Selecta | 6049.00 |
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| Versa V 4/50 4MB, 340MB act clr | 1499.00 |
| Versa 2000D 4/75 4MB, 350MB dual clr | 1899.00 |
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| Versa 2000C 4/75 8MB 350MB act clr | 2399.00 |
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| Versa 4050C 5/90 810MB hi-res clr | 4499.00 |
| Versa 4080H 5/120 1GB hi-res clr | 4999.00 |

**TEXAS INSTRUMENTS**

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|---|---|
| Extensa 450 DX4/75 340MB dual color | 1455 23 |
| Extensa 450T DX4/75 340MB act color | 1938.12 |
| Extensa 550 5/75 524MB dual color | 1948.00 |
| Extensa 550CD 5/75 524MB dual clr CD | 2865.30 |
| Extensa 550CDT 5/75 524MB act clr CD | 3442.65 |
| Extensa 560CD 5/75 810MB dual clr CD | 2755.84 |
| Extensa 560CDT 5.75 1 2GB act clr CD | 3697 09 |
| TM5000 5/75 524MB dual color | 2375.91 |
| TM5000 5/75 810MB act color | 2969 33 |
| TM5100 5/90 1 2GB act color | 3409 26 |

### PRINTERS

**OKIDATA**

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| ML320 | 319.20 | Pacemark 3410 | 1254.49 |
| ML321 | 449 70 | OL600e | 399 00 |
| ML380 | 224.45 | OL810e/PS | 899.46 |
| ML395 | 999.19 | OL810E | 759 78 |
| ML520 | 385.15 | OL1200 | 1099 72 |
| ML521 | 499.84 | OKIJET 2010 | 329.88 |
| ML590 | 446.59 | | |

**Canon**

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| BJC70 color | 355.65 | BJC4100 | 379.00 |
| BJC210 | 239 00 | | |

**EPSON**

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| LQ570+ | 248 86 | DFX8000 | 2333 18 |
| FX870 | 289.18 | Stylus Color IIs | 278 39 |
| FX1170 | 377.51 | Stylus Color II | 399.00 |
| LQ1070+ | 384.00 | Stylus Color Pro | 599.00 |
| LQ870 | 444 14 | Stylus Pro XL | 1799 00 |
| LQ1170 | 689 85 | ActionLaser 1100 | 383.82 |
| LQ2550 | 963.95 | | |

**LEXMARK LASER PRINTERS**

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| WinWriter 150c thermal inkjet | 316 99 |
| 4039 10 Plus 10ppm | 1099 86 |
| Optra R Plus 16ppm | 1423.21 |
| Optra R Plus 16ppm, 2 paper trays | 1615.17 |
| Optra LX Plus 16ppm | 2207.66 |
| Optra LXi Plus 16ppm | 2868 64 |
| Optra C color laser | 6232.32 |

**Panasonic**

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|---|---|---|---|
| 1150 | 133 57 | 2135 Color | 247.53 |
| 2023 | 182.98 | 3123 | 251.68 |
| 2130 | 204 60 | | |

### PRINTERS

**TEXAS INSTRUMENTS**

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| microLaser WIN/4 | 429 83 |
| microLaser 600 | 865.10 |
| microLaser Pro 600 PS23 | 1197.02 |
| microLaser Pro E | 1365.49 |
| microLaser PowerPro/12 | 1399 91 |
| microLaser Pro/8 | 1144.87 |

**HEWLETT PACKARD**

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|---|---|
| DeskJet 340 portable | 295.74 |
| DeskJet 600 | 235.90 |
| DeskJet 660C | 376.66 |
| OfficeJet inkjet fax/copier/printer | 589.86 |

**COSTAR**

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| LabelWriter XL WIN | 149.94 |
| LabelWriter XL Plus WIN | 224.89 |

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**Maxtor**

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| 540MB EIDE | 184.86 |
| 850MB Fast-ATA | 222 31 |
| 1 26GB IDE | 262 99 |
| 1 8GB Fast-ATA | 291.05 |

**MICROPOLIS**

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| 4221 2GB SCSI-2 | 641.00 |
| 1936 3GB SCSI-2 | 844.95 |
| 1936AV 3.02GB Fast SCSI-2 | 1359 78 |
| 3243 4.3GB SCSI-2 | 1005.15 |

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| 635MB IDE | 194.23 | 1 27GB Fast-ATA | 296 90 |
| 850MB Fast-ATA | 204.75 | 2 14GB Fast SCSI-2 | 645.17 |
| 1 08MB IDE | 228.15 | 4 29GB Fast SCSI-2 | 993.53 |

**Seagate**

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| 850MB Fast ATA-2 | 199.88 | 2 14GB F/W SCSI-2 | 855.44 |
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| Caviar 635MB IDE | 189 70 |
| Caviar 853MB EIDE | 199 95 |
| Caviar 1GB EIDE | 237 27 |
| Caviar 1 2GB EIDE | 279.53 |
| Caviar 1 82GB EIDE | 299.40 |

**CONTROLLERS**

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| Acculogic SIDE-3+ w/on board BIOS | 48.90 |
| Acculogic SIDE-4+ w/par, 2sar, game | 35.06 |
| Acculogic SIDE-4VL EIDE, 16550 serial | 89 76 |
| Adaptec 1542CP SCSI Master Kit | 259 73 |
| Adaptec AVA1505 SCSI-2 CD Kit | 54 95 |
| Adaptec 2842 VLB SCSI-2 | 249 83 |
| Adaptec PCI Ultra Wide SCSI Kit | 299.80 |
| Promise 2300+ EIDE VLB | 59.87 |

### MODEMS & COMMUNICATIONS

**BOCA**

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| Online Express 14 4 internal w/fax | 52 75 |
| Online Express 14 4 external w/fax | 79 78 |
| V 34 28 8 internal w/fax | 157 33 |
| V 34 28 8 external w/fax | 205.00 |

**Hayes**

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| ACCURA 144 internal w/fax | 81.13 |
| ACCURA 144 external w/fax | 94.68 |
| ACCURA 288 V 34 internal w/fax | 173.76 |
| ACCURA 288 V 34 external w/fax | 195.14 |
| OPTIMA 144 external w/fax | 374.30 |
| OPTIMA 288 V 34 internal w/fax | 365.14 |
| OPTIMA 288 V.34 external w/fax | 419.44 |
| OPTIMA 288 Business Modem | 433.23 |

**PRACTICAL PERIPHERALS.**

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| 14 4 Mini Tower w/fax | 81.13 |
| V 34 28 8 internal w/fax | 155 94 |
| V 34 28.8 Mini Tower w/fax | 174.41 |

**MICROCOM**

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|---|---|
| Deskporte Fast ES V 34 28 8 | 179 94 |
| DeskPorte 28 8P V 34 | 229.85 |

### MODEMS & COMMUNICATIONS

**MOTOROLA**

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|---|---|
| Lifestyle 28 8 int. w/fax, Caller I D | 187.20 |
| Lifestyle 28 8 ext w/fax Caller I D | 196.38 |
| Power 28 8 ext w/fax, Caller I D flash ROM | 258.49 |
| BitSURFR Pro ISDN terminal adapter | 349.84 |

**PUREDATA**

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| SatisFAXtion 400, Internal | 288 84 |
| SatisFAXtion 400e, external | 324 88 |

**U.S. Robotics**

**SPORTSTER MODEMS**

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| 14 4K internal w/fax | 94 81 |
| 14 4K external w/fax | 111 00 |
| 28 8K V 34 internal w/fax | 179 88 |
| 28 8K V 34 external w/fax | 199 86 |
| VI 14 4K internal w/fax & voice | 108 41 |
| VI 14 4K external w/fax & voice | 128.89 |
| VI 28 8K V 34 internal w/fax & voice | 197.60 |
| VI 28 8K V 34 external w/fax & voice | 217 14 |
| VI DSVD V 34 Internal w/fax & voice | 278.82 |

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| V 34 internal w/fax | 347 42 |
| V 34 external w/fax | 382.75 |

**ZOOM**

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| V 34 28 8 FaxModem internal | 142 89 |
| V 34 28 8 FaxModem external | 185.10 |
| 14 4 V 32bis Voice Speakerphone internal | 111 38 |
| V 34 28 8 Voice speakerphone Internal | 185 10 |

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| Back UPS Pro 420 Plug and Play | 238 82 |
| Back UPS Pro 650 Plug and Play | 295 27 |
| SmartUPS 700 | 378.01 |
| SmartUPS 1000 | 517 15 |
| SmartUPS 1400 | 646 78 |
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| Line-R 600 | 119.09 |

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| BC PERS 420 | 129.74 |
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| BC PRO 850 | 284.98 |
| BC PRO 1050 | 319.45 |

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| SMART 450 LAN | 273 94 |
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| SMART 850 LAN | 389 74 |
| SMART 1050 LAN | 455.07 |
| Isobar 4 OUTLET | 38.96 |
| Isobar 6 OUTLET | 46.38 |

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|---|---|
| 3Com Etherlink III PCMCIA | 159.11 |
| 3Com Etherlink IIIC combo | 464.21 |
| Adaptec APA1480 SCSI-2 | 177 42 |
| Hayes EZJack 14 4 w fax | 159.32 |
| Hayes EZJack V 34 w/fax | 219.00 |
| IBM Token Ring 16/4 | 342.81 |
| Linksys Ethernet combo | 139 87 |
| Megahertz XJack 14 4 data/fax | 99.48 |
| Megahertz XJack Gold 14 4 data/fax | 137.55 |
| Megahertz V 34 data/fax w/ XJack | 312.34 |
| Megahertz 10BT Enet adapter w/XJack | 142.04 |
| Megahertz cell-ready 28 8/Enet w/XJack | 459.86 |
| Motorola Lifestyle 28 8 data/fax | 279 76 |
| Motorola Marquis 28 8 data/fax & LAN | 467 32 |
| New Media Bus Toaster SCSI-2 host | 194 64 |
| New Media Wave Jammer sound card | 218 71 |
| Simple Tech 28 8 Communicator | 218 04 |
| Simple Tech 14 4K modem + voice | 97 18 |
| Simple Tech SCSI adapter | 99 96 |
| Simple Tech 170MB hard drive | 346.88 |
| SMC Elite Ethernet combo | 173 77 |
| USR Sportster 14 4K | 99 22 |
| USR Sportster V.34 with DataView | 288 93 |
| Xircom Ethernet 10BT | 141 21 |
| Xircom Ethernet combo | 188 18 |
| Xircom Ethernet+modem 10BT | 333 15 |
| Xircom Ethernet+modem combo | 382.88 |
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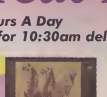

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72639 **Minolta/Play** Snappy Video Grabber ..... $199**

## N - Z

69868 **Quarterdeck** Clean Sweep Windows ..... $28**
76686 **Quarterdeck** MagnaRAM2 for Windows 95 ..... $28**
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Presario 650, 660, 663, 433, 425, 866, 850, 833 866
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4MB 172712-001 $125 8MB 172713-001 $219
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Prolinea Enhanced (all models), 466, 433, 450, CDS, 425S, 433S
4MB 141864-001 $133
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16MB 149320-001 $525
DeskPro 590MX, 575MX, 575, 590, 5100
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4MB 410-12002 $125 16MB 410-12003 $459
Ready 425, 433
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PowerMate 386/33i, Express Te, e models
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16MB n/a $459 32MB n/a $959
Aptiva 300 500 and 700 series
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Eduquest 55
4MB 74G1299 $17[illegible]
Eduquest 30 , 40 and 50 models
4MB 60G0896 $174 16MB 60G0898 $549
PS/1 286, 386SX
2MB 92F9935 $79 4MB 92F9694 $149
Valuepoint Performance models
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8MB 92G7520 or 73G3132 $2[illegible]
PS/1 Consultant, Essential, Expert models x43, x44, PS/Valuepoint all models except Cxx models
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2MB 30F5360 $7[illegible]
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2MB 6450604 $87
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| | 8MB | 190597-001 | $319 |
| | 16MB | 190598-001 | $599 |
| Contura 4/25, 4/33 | 4MB | 144790-001 | $149 |
| | 8MB | 144790-002 | $269 |
| | 16MB | 144790-003 | $599 |
| LTE Elite 4/40, 4/50, 4/75 | 4MB | 199013-001 | $149 |
| | 8MB | 199015-001 | $309 |
| | 16MB | 199017-001 | $595 |
| Contura 400, 410, 420, 430 | 4MB | 147653-001 | $159 |
| | 8MB | 147655-001 | $289 |
| (PRICE DROP!) | 16MB | 147657-001 | $649 |
| Elite 5000 | 8MB | 213515-001 | $319 |
| | 16MB | 213515-002 | $599 |
| | 32MB | 213515-003 | $1 125 |
| | 64MB | 213515-004 | $2,199 |

### AST

| Model | MB | Part No. | Price |
|---|---|---|---|
| Ascentia 800N, 810N (PRICE DROP!) | 4MB | 501488-001 | $169 |
| | 8MB | 501488-002 | $279 |
| | 16MB | 501488-003 | $629 |
| Ascentia 900N, 910N | 4MB | 501392-001 | $159 |
| | 8MB | 501392-002 | $329 |
| (PRICE DROP!) | 16MB | 501392-003 | $649 |
| Ascentia 950N | 8MB | 501728-002 | $299 |
| | 16MB | 501728-003 | $629 |

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| ThinkPad 360 (PRICE DROP!) | 4MB | 84G5689 | $149 |
| | 8MB | 84G5692 | $269 |
| | 16MB | 84G5995 | $599 |
| ThinkPad 365, 365CD | 4MB | 92G7287 | $159 |
| | 16MB | 92G7293 | $629 |
| ThinkPad 701 | 4MB | 04H6193 | $159 |
| | 8MB | 04H6194 | $319 |
| | 16MB | 04H6195 | $629 |
| ThinkPad 700, 720 | 4MB | 07G1419 | $170 |
| | 8MB | 07G1420 | $299 |
| | 16MB | 07G1421 | $589 |
| ThinkPad 760, 760CD | 8MB | 92G7316 | $339 |
| | 16MB | 92G7316 | $629 |

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| Model | MB | Part No. | Price |
|---|---|---|---|
| Versa S Versa 2000 (PRICE DROP!) | 4MB | OP-410-1201 | $149 |
| | 8MB | OP-410-1202 | $309 |
| | 16MB | OP-410-1203 | $629 |
| Versa V, M, P, 4000, 4050, 4080 (PRICE DROP!) | 4MB | OP-410-4001 | $169 |
| | 8MB | OP-410-4002 | $299 |
| | 16MB | OP-410-4003 | $599 |
| | 32MB | OP-410-4004 | $1,199 |

### DELL

| Model | MB | Part No. | Price |
|---|---|---|---|
| Latitude XPi, P75, P90 | 8MB | 310-3435 | $269 |
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| Model | MB | Part No. | Price |
|---|---|---|---|
| HiNote | 4MB | FR-PCP7M-AA | $149 |
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| | 16MB | FR-PCP7M-AC | $599 |
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| | 8MB | 9803950-0001 | $319 |
| | 16MB | 9803933-0001 | $629 |
| Extensa 550, 550CD, 560, 560CD | 8MB | 9809810-0001 | $299 |
| | 16MB | 9804841-0001 | $629 |
| | 32MB | 9809811-0001 | $1,199 |
| TM5000, 5010, 5030, 5100, 5200 | 8MB | 9798816-0001 | $319 |
| | 16MB | 9798816-0002 | $749 |
| TM 4000M (PRICE DROP!) | 4MB | 9793357 | $179 |
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| Model | MB | Part No. | Price |
|---|---|---|---|
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| | 8MB | PC-PA2020U | $279 |
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| T400, T405, T410, T415, T610 Portege, T100, T105 | 8MB | NW2031U | $399 |
| | 16MB | NW2032U | $749 |
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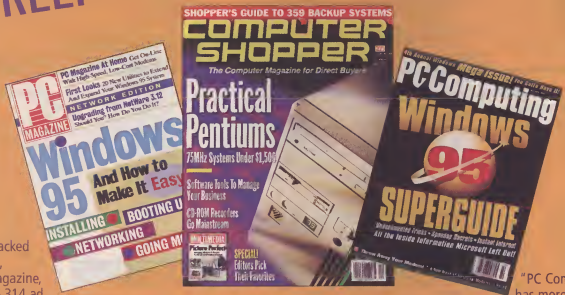


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| 64Kx1 | – | 11 00 | 8 00 | 8 00 |
| 64Kx4 | – | 11 00 | 9 00 | 8 00 |
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| 1Megx4 | – | 49 00 | 39 00 | 38 00 | – |
| 1Megx4 (Zip Pk) | – | 24 00 | 22 00 | 21 00 | – |
| 256x4(Page Dip) | – | 7 25 | 8 75 | 8 50 | 5 85 |
| 256 4(Static Dip) | – | – | 9 95 | – | – |
| 256x4(Page Zip) | – | 9 25 | 9 00 | 8 95 | – |
| 256x4(Video Zip) | – | – | 12 95 | 11 95 | 8 85 |
| 256x8(SOJ) | – | 19 00 | 18 00 | – | – |
| 256 x1 | – | 3 25 | 2 95 | 2 75 | 2 25 |
| 64x4 | | – | – | 3 75 | – |
| 64x1 | | – | – | – | 2 00 |
| 256x16 SOJ | – | – | 29 00 | – | – |
| 256x16 Video Zip | – | 49 00 | 39 00 | – | |

## INTEL Math Chips

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| 80287-XL | 39 00 |
| 80387-16 DX | 39 00 |
| 80387-20 DX | 44 00 |
| 80387-DX (Does All) | 39 00 |
| 80487-SX (Does All) | 199 00 |
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|---|---|---|---|---|---|---|
| 256 x 9 | | – | – | 10 00 | 9 00 | 8 00 |
| 1Meg x 9 (3 chip) | – | | 41 00 | 39 00 | 36 00 | – |
| 1Meg x 9 (9 chip) | | | 41 00 | 39 00 | 28 00 | 24 00 |
| 4Meg x 9 | | | 152 00 | 149 00 | 142 00 | – |
| 16Meg x 9 (9 chip) | | – | 497 00 | 497 00 | – | – |

## 72 PIN SIMMS (EISA), EDO

| | 60NS | 70NS | 80NS |
|---|---|---|---|
| 256 x 36 1 mg | – | 54 00 | 49 00 |
| 512 x 36 2 mg | 89 00 | 64 00 | 69 00 |
| 1 meg x 36 4 mg | 147 00 | 144 00 | 139 00 |
| 2 x 36 8 mg | 309 00 | 299 00 | 299 00 |
| 4 x 36 16 mg | 569 00 | 548 00 | 549 00 |
| 8 x 36 32 mg | 1159 00 | 1138 00 | 1139 00 |
| 16 x 36 64 mg | 2569 00 | 2549 00 | – |
| 1 x 32 4 mg | 129 00 | 124 00 | 124 00 |
| 2 x 32 8 mg | 249 00 | 236 00 | 239 00 |
| 4 x 32 16 mg | 499 00 | 489 00 | 489 00 |
| 8 x 32 32 mg | 999 00 | 876 00 | 879 00 |
| 1 x 32 4 mg EDO | 134 00 | 134 00 | – |
| 2 x 32 8 mg EDO | 259 00 | 259 00 | – |
| 4 x 32 16 mg EDO | 589 00 | 589 00 | – |
| 8 x 32 32 mg EDO | 1299 00 | 1269 00 | – |

## DIMMS (168 pin, 64 bit)

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|---|---|---|
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| 2 x 64 | 16Meg | 499 00 |
| 4 x 64 | 32Meg | 989 00 |
| 8 x 64 | 64Meg | 2039 00 |

## SO DIMMS (72 pin)

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| 8Meg | 319 00 |
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| MS-L Advantage Pro DX33 SX25 | 8Meg | 500987-003 | 258 00 |
| | 16Meg | 500987-004 | 489 00 |
| | 32Meg | 500987-005 | 976 00 |
| Premmia LX P/60 MX4/66d 4/100T P/60 | 8 Meg | 500987 003 | 320 00 |
| | 16 Meg | 501340-002 | 549 00 |
| | 32 Meg | 500987 005 | 958 00 |
| | 64 Meg | 501569-001 | Call |
| Premmia 4133 4133S 4/50d, 4/80d | 8 Meg | 501159-002 | 338 00 |
| Premmia SE 4/33 4/66d P/60 | 16 Meg | 501159-003 | 658 00 |
| Premmia MTE 4/33 4/66d P/60 | 32 Meg | 501159 004 | 1149 00 |
| Manhattan G V Series Server | 64 Meg | 501159 005 | 2298 00 |
| Power Premium 3/33 4/33 4/33S 4/50d, 4/66d | 8Meg | 500780-001 | 378 00 |
| Premium 486/25, 486/25E, 486/33, 486/33E | | | |
| Premium 386/33TE 486/25TE, 486/33TE | | | |
| Prem II 386/25, 386/33 486/33 486 SX/20 | | | |
| Bravo 486/25 486/33 | 2 Meg Kit | 500780-005 | 118 00 |
| Advantage 486/25 486/33 486/33P 486 SX/20 | | | |
| Premium SE4/22 | 8Meg Kit | 500780-001 | 338 00 |
| Premium SE 4/50, d 66d, P/60 | 1 Meg | 500780-003 | 59 00 |
| Prem 386/33T, 386 SX16 Prem II 386SX.20 386/25 | 4Meg | 500780 004 | 169 00 |
| Premmia GX P/90 P/100 | 8Meg Kit/16Meg Kit | 501565-001/501566-001 | 378/699 |
| | 32Meg Kit/64Meg Kit | 501567 001/501568-001 | 1358/2699 |
| AST Cupid Board | 0 32 Meg | 500818 001 | 159 00 |

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| Ambra NC 425SL | 2/4/8 Meg | 109/169/319 |
| Ambra N Series | 4/8/12/16 Meg | 179/319/549/619 |
| Ambra SN Series | 4/16 Meg | 179/639 |
| Ambra Sprinta SLC II | 2/8 Meg | 89/319 |
| Ambra N 75 N 100 | 4/8/16 | 164/319/619 |

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| Z386/33 25 20 33E 486/25E | 4Meg | ZA3800MK | 149 00 |

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| 30F5360 (2Meg) | 30 286 25-286 50 MTHR 8D | 104 00 |
| 6450375 (1Meg) | 80 041 | 79 00 |
| 6450379 (2Meg) | 80-111 311 121 321 081 161 | 64 00 |
| 6451060 (4Meg) | 80-A21 A 61 80 A31 80 111 80-311 | 189 00 |
| 6450604/92G7196 (2Meg) | 70-061 E61 121 50Z 55SX 65SX P-70<br>55LS 65LS X Station 120 & 130 35SX 35LS 40SX | 99 00 |
| 6450608 (2Meg) | 70-A21 A-61 B-21 B-61, 35SX 35LS 40SX Val Pt 325T | 90 00 |
| 78X8955 (128K) | 25 | 35 00 |
| 34F2933 (4Meg) | 35SX, 40SX, 55SX 65SX, 55LS 65LS | 154 00 |
| 87F9977/92G7199 (4Meg) | 55SX, 55LS, 65SX, 40SX, 35SX, 35LS | 154 00 |
| 1057035 (512K) | P/S1 286 | 49 00 |
| 92F9935 (2Meg) | P/S1 & P/S1/386SX-2121 | 109 00 |
| 92F9694 (4Meg) | P/S1 & P/S1/386SX, Model 2121 | 189 00 |
| 92G7200 (4Meg) | PSI Expert Consultant Willow | 154 00 |
| 92G7201 73G3131 (4Meg) | Value Point Performance PC Server 4/66 | 154 00 |
| 92G7539 (4Meg) | Aptiva 310 330 350 510 530 710 730 | 129 00 |
| 92G7541 (8Meg) | Aptiva 310 330 350 510 530 710 730 | 239 00 |
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| 92G7545 (32Meg) | Aptiva 310 330 350 510 530 710 730 | 972 00 |
| 73G3132/92G7203 (8Meg) | Value Point Performance PC Server 4/66 | 299 00 |
| 60G1622/92G7204 (16Meg) | Value Point Performance PC Server 4/66 | 559 00 |
| 92G7205 (32Meg) | Value Point Performance PC Server 4/66 | 1239 00 |
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| 6450128/92G7200 (4Meg) | 57SX 90 95 P 75 57SLC 56 56SLC P/S1 386SX<br>Mod 2123 2133 2155 Val Pt 77 486CS2, 486SX SVR85<br>Value Point 77 486DX2 486SX SVR 85 | 139 00 |
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| 07G1415/07G1420 (4Meg) | Thinkpad 750 C 700 C 720 C CL57SX | 175 00 |
| 07G1416/07G1421 (8Meg) | Thinkpad 750 C 700 C 720, C, CL57SX | 339 00 |
| 86G0095 (16Meg 32Meg) | Thinkpad 750 C | 629/1268 |
| 66G0094 (4Meg) | Thinkpad 755 360 355 340, 450 | 164 00 |
| 66G0094 (8Meg) | Thinkpad 755 360 355 340, 450 | 319 00 |
| 66G0094 (16Meg 32Meg) | Thinkpad 755 360 355 340 450 | 609/1220 |
| 8189098 (4Meg) | Thinkpad 500 510CS (3 3 volt) | 164 00 |
| 8189099 (8Meg 16Meg) | Thinkpad 500 510CS (3 3 volt) | 319/609 |
| 79F0999 (2Meg) | LX40 N33SX PS Note | 103 00 |
| 79F1000 (4Meg) | LX40 N33SX, PS Note Tkpd 350 350c, PS Note 425 | 164 00 |
| 79F1001 (8Meg) | LX40 N33SX PS Note | 319 00 |
| Hard Drive (524Meg 710 Meg 1 3 Gig) | Thinkpad 750 755 360 355 | 769/949/1119 |
| (4Meg/16Meg) | Thinkpad 755 Dimm Modules | 169/619 |
| (4Meg/16 Meg w/Adap | Thinkpad 755 | 228/678 |
| 60G0378 (8Meg) | Thinkpad 350 350c PS Note 425 | 319 00 |
| 60G0379 (16Meg) | Thinkpad 350 350c PS Note 425 | 569 00 |
| 92F8804 (2Meg) | N45SL | 108 00 |
| 92G7259 (4Meg) | Thinkpad 701C CS Butterfly | 164 00 |
| 92G7261 (8Meg) | Thinkpad 701C CS Butterfly | 319 00 |
| 92G7263 (16Meg) | Thinkpad 701C CS Butterfly | 609 00 |
| 4Meg/8Meg/16Meg (730T only) | Thinkpad 340 730T | 199/339/629 |
| (4Meg 8Meg 16Meg) | Thinkpad 760 | 179/339/639 |
| 8Meg/16Meg | Thinkpad 820 | 390/729 |
| 4Meg/8Meg/16Meg/32Meg | Thinkpad 850 | 193/388/719/1439 |
| 4Meg/8Meg/16Meg/32Meg | PC300 Pentium | 179/339/629/1259 |

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| | 1Meg Board/4Meg Board | 149/249 |
| Deskpro 386 25E/20E | 1Meg Module/4Meg Module | 79/169 |
| | 1Meg Board/ 4 Meg Board | 149/249 |
| Deskpro 386/25 20 | 1Meg Module/4Meg Module | 79/169 |
| Deskpro System Pro 386/33 486/25 486/50L | 2/8/32Meg | 99/299/1399 |
| Deskpro 4/66I 4/33I 4/25IS 3/33I 3/25I | 2/4/8Meg | 89/154/319 |
| Deskpro M" Series | Expansion Board 0K | 119 |
| Deskpro 450 466 4100 575 590 5120, 5133 | 4/8/16/32Meg | 159 318 819, 1149 |
| Deskpro XE 433S 450 466 | 2/4/8Meg | 89/154/319 |
| Deskpro XE 560 | 8/16/32/64/128Meg | 356/616/1276/2476/Call |
| Deskpro XL450 486 XL560, xl566 XL575 5100 xl500 | 4/8/16/32/64Meg | 178/308/538/1238/2378 |
| Presario 433, CDS520 CDJV520 CDL524 CDS528 CDTV528 660 CDS660 CDS720 CDS724 CDS744, CDS860 CDS920 CDTV920 924 CDS924 CDS954 | 4/8/16/32Meg | 139/279/549/1049 |
| Presario 400 Series 800 Series 900 Series | 2/4/8/16/32Meg | 89/154/319/649/1189 |
| Presario CDS774 CDS972 CDS982, CDTV978, CDS974 (in pairs) CDS992 7152 7170 7180 9540 9548 9564 | 4/8/16/32Meg | 139/279/549/1099 |
| Prolinea 4/25S 4/33 4/33S 4/50 4/66 CDS | 1/2/4/8Meg | 59/89/154/319 |
| Prolinea MT 4/33S 4/50 4/66 Enhanced 4/33S 4/50S 4/50 4/66 | 2/4/8/16/32 Meg | 59/154/318/649/1129 |
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| Elite 5000 | 8Meg/16Meg/32Meg/64Meg | | 329/639/1249/2569 |
| LTE/386S/20 | 4Meg Module | 121 125-002 | 209 00 |
| LTE LITE/20 25 25C | 4Meg Module | 128769 002 | 209 00 |
| LTE LITE/20 25 25C | 8Meg Module | 128769 003 | 439 00 |
| LTE LITE/20 25 25C | 16Meg Module | 128769-004 | 669 00 |
| LTE LITE 425C/33C/25E/25L | 4Meg Module | 142337 002 | 179 00 |
| LTE LITE 425C/33C/25E/25L | 8Meg Module | 142337-003 | 319 00 |
| LTE LITE 425C/33C/25E/25L | 16Meg Module | 142337 004 | 819 00 |
| SLT/286 | 4Meg Module | 110237 001 | 178 00 |
| SLT/386 | 2Meg Module | 118304 001 | 109 00 |
| SLT/386 | 4Meg Module | 118305 001 | 195 00 |
| Concerto LTE Elite | 4Meg | 144790-001 | 164 00 |
| | 8Meg | 144790 002 | 319 00 |
| | 16Meg | 144790-003 | 609 00 |
| Contura 320, 325 | 2Meg | 139497 001 | 99 00 |
| | 4Meg | 139498-001 | 164 00 |
| | 8Meg | 139499 001 | 319 00 |
| Contura 400 410 | 4Meg/8Meg/16Meg | | 189/319/609 |
| Contura 420 430 | 4Meg/8Meg/16Meg/20Meg | | 169/319/609/799 |
| Contura 4/25 4/25C 4/25CX | 4Meg | 146520-001 | 164 00 |
| | 8Meg | 146521-001 | 319 00 |
| | 16Meg | 146531-001 | 619 00 |
| Aero 4/25 4/33 | 4Meg | 190532 001 | 164 00 |
| | 8Meg | 190597 001 | 319 00 |

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| 1 6 GIG | — | 319 | 1 6 GIG | — | 309 | 1 6 GIG | AC31600 | 348 |

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| S-RAM Cards 2MEG | 229 | Audio Card | 169 |
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| T2100 2105 2150 2155, 2110 2115 | 4Meg/8Meg/16Meg/24 Meg | | 164/319/609/899 |
| T4400SX SXC T6400 T6600 | 4Meg | PC PA2004U | 189 00 |
| T4400SX SXC T6400 T6600 | 8Meg | PC PA2005U | 379 00 |
| T4400SX SXC T6400 T6600 | 16Meg | PC-PA2010U | 889 00 |
| T4500 C T4600, T4700 T1900 C T1910, T1950 (3 3 v) | 4Meg | PC-PA2012U | 189 00 |
| T4500 C T4600 T4700 T1900 C T1810 T1950 (3 3 v) | 8Meg | PC-PA2013U | 318 00 |
| T4500 C T4600 T4700 T1900 C T1810 T1950 (3 3 v) | 16Meg | PC-PA2014U | 609 00 |
| T4700 4800 4850 (Hard Drive) | 524Meg/710Meg/1 3 Gig | | 739/969/1119 |
| T3400CT, T2400 T3600 | 4Meg/8Meg/16Meg | PC-PA2019U | 179/349/619 |
| T3400CT | 32Meg | | 1549 00 |
| T3100SX | 2Meg | PC15-PA8308U | 109 00 |
| T3100SX | 4Meg | PC15 PA8310U | 189 00 |
| T5200/T8500 | 2Meg | PC10-PA8304U | 49 00 |
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| T600 610 CT | 8Meg/16Meg/32Meg | | 439/879/1758 |
| T700 | 8Meg/16Meg/32Meg | | 579/1158/2318 |
| T400CS 400CDT | 8Meg/16Meg/32Meg | | 439/879/1758 |

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| MODEL | AMT UPGRADED | MANU PART # | PRICE |
|---|---|---|---|
| ACER 730 735C, 760, 780 | 2Meg/4Meg/8Meg | | 99/169/319 |
| ACER 763 765 782 784 786 787 | 4Meg/8Meg/16Meg | | 169/319/609 |
| ACER 750 | 4Meg/8Meg/16Meg | | 169/319/609 |
| ACER Note Pro ACER Note Lite | 4Meg/8Meg/16Meg | | 189/379/677 |
| ALR Venture | 4Meg | 12407980 | 249 00 |
| AST Ascentia 900N, 800N | 4Meg/8Meg/16Meg | | 169/319/609 |
| AST Ascentia 950 | 8Meg/16Meg | | 339/635 |
| AST Bravo & Explorer | 4Meg/16Meg | 501255-001 -002 | 189/609 |
| AST Notebook Prem Exec 386SX/20/25/25L | 4Meg | 500814-003 | 179 00 |
| AST Power Exec 3/25C, 425EL 425SL | 4Meg/16Meg | 501166-001 003 | 179/619 |
| AST Power Exec 4/33SL | 4Meg/16Meg | 501318 001 002 | 199/609 |
| AT&T Globalyst 130 *(Call for other Globalyst)* | 4Meg/8Meg/16Meg | | 179/329/619 |
| AT&T Globalyst 200 | 4Meg/8Meg/16Meg | | 179/339/619 |
| AT&T Safari NSX/20 | 4Meg | PEC 37651 | 259 00 |
| Austin DX4, DX2, SX2 SX Series | 4Meg/16Meg | | 179/619 |
| Bondwell B310, Plus | 1 Meg | 23050-09100 | 88 00 |
| Bondwell B310V SX | 1Meg/4Meg | | 109/229 |
| Canon Innova Book 150 | 4Meg/16Meg | | 169/618 |
| Canon Innova Book 200LS | 4Meg/8Meg/16Meg/24Meg | | 169/319/610/979 |
| Canon Innova 486 | 2Meg/4Meg/8Meg | | 109/209/448 |
| Canon Innova 486-10 | 4Meg/16Meg | | 169/609 |
| Canon Notejet 486 | 4Meg/8Meg | | 179/359 |
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| DEC HiNote Ultra HiNote | 4Meg/8Meg/16Meg | | 179/329/619 |
| Dell Latitude LX 4100D, XP 4100D | 4Meg/8Meg/16Meg | | 189/329/618 |
| Dell Latitude M, MC, MCX | 4Meg/8Meg/16Meg | | 179/329/619 |
| Dell Latitude XP, 475 4100, 4100CX | 4Meg/16Meg | | 179/609 |
| Dell Latitude 486 425, 433C, 433CX, 450 450CX | 4 Meg/16 Meg | | 179/609 |
| Epson ActionNote 650 650c 860c 660cx | 4Meg/8Meg/16Meg | | 169/319/610 |
| Epson ActionNote 700 700c 700cx | 4Meg/16Meg | | 179/610 |
| Epson ActionNote 800, 880 866c | 4Meg/8Meg/16Meg/20Meg | | 169/319/610/799 |
| Epson ActionNote 4000 Notebook | 6Meg | | 279 |
| Epson ActionNote 4LC/25, 4LC/33, 4SLC/2-50 | 6Meg | | 279 |
| Everex Tempo LX, LX20, Carrier | 2Meg | PCA 00053 0001 | 109 00 |
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| Gateway 2000 Nomad 425 DXL/SXL | 4Meg/16Meg | | 199/768 |
| Gateway 2000 486 Handbook or Liberty | 4Meg/16Meg | | 179/610 |
| Gateway 2000 Solo Series | 4Meg/8Meg/16Meg | | 379/698/1279 |
| HP Omnibook 300 480 425 | 2Meg/4Meg | | 118/189 |
| HP Omnibook 530, 600 | 4Meg/8Meg/12Meg | | 179/319/529 |
| HP Omnibook 4000 | 4Meg/8Meg/16Meg | | 169/319/610 |
| HP Omnibook 5000 | 8Meg/16Meg/32Meg | | 318/610/1220 |
| Leading Edge Aviva 2000 | 4Meg/16Meg | | 179/639 |
| Lexmark SE10 | 4Meg/8Meg | | 179/349 |
| Magnavox Metalis | 1Meg/4Meg | 286 386SX | 109/179 |
| Midwest Micro Elite SX-25 SX33, DX2-50 DX2 66 | 4Meg/8Meg/16Meg | | 178/319/610 |
| Midwest Micro Elite Sndbk SX33 DX3 50, DX4-75, DX4-100 | 4Meg/8Meg/16Meg | | 179/319/610 |
| Midwest Micro Elite Sndbk Plus D5-75 D5 90 | 4Meg/8Meg/16Meg | | 179/319/610 |
| NCR Safari 3160 3181 | 4Meg/ 8 Meg | | 189/368 |
| NEC Ultralite Versa E V, MP | 4 Meg/8Meg/16Meg/20Meg | DP4104 | 139/359/619/798 |
| NEC Versa Removable Hard Drive | 540Meg/710Meg/810Meg/1 3 Gig | | 719/899/919/1169/1229 |
| NEC Versa S | 4Meg/8Meg/16Meg | | 179/319/610 |
| NEC Versa 2000C & 2000D | 4Meg/8Meg/16Meg | | 179/329/639 |
| NEC Versa 4000 | 4/8/12/16/20/32Meg | | 189/329/549/619/699/1569 |
| Packard Bell 386SX 286 | 1Meg 4Meg | 286 386SX | 109/178 |
| Packard Bell Statesman | 2Meg/8Meg | | 109/329 |
| Panasonic CF170 CF270 CF370 | 1Meg | CF-BA165 | 59 00 |
| Panasonic CF380 CF480 | 2Meg/4Meg/6Meg | | 119/199/308 |
| Panasonic CF V21 P CF-560 | 4Meg/16Meg | | 179/648 |
| Panasonic CF V41 | 4Meg/8Meg/16Meg/32Meg | | 219/419/682/1999 |
| Sanyo 17/18 NB | 2Meg | MBC-NBMEM2 | 109 00 |
| Sharp 6781 6881 6785 6700 6800 6741 | 2Meg/4Meg | | 109/179 |
| Sharp 8150 8650 8660 7700 7760 | 4Meg/16Meg | | 179/619 |
| Sharp 8700 & 8900 | 4Meg/8Meg/16Meg | | 179/319/610 |
| Sharp PC310 PC350 3010 & 3050 | 4Meg/8Meg/16Meg | | 179/319/610 |
| TI Travelmate 2000 | 1Meg | 2588034 0001 | 79 00 |
| TI Travelmate 3000 | 2Meg | 2566996 1 | 84 00 |
| TI 4000, TI 4000E | 4Meg/16Meg | | 179/750 |
| TI 4000M | 4Meg/16Meg | | 179/750 |
| TI 5000 5100 | 8Meg/16Meg | | 319/619 |
| TI Extensa 450 450T 455 455T | 4Meg/8Meg/16Meg | | 179/319/629 |
| Tandy 1510 2810 3810 | 1Meg | | 49 00 |
| Tandy 2820 3820 3830 | 2Meg/4Meg/6 Meg | | 119/199/309 |
| Twinhead Albma Compudyne 486SX DX Tandy 4860 | 4Meg/16Meg | | 179/638 |
| Twinhead Slimnote 5 | 4Meg/8Meg/16Meg | | 199, 379, 648 |
| Ultra 486 TS38 | 4Meg/8Meg/16Meg | | 189/389/629 |
| Zeos 386SX Notebook (not the + version) | 2Meg | | 109 00 |
| Zenith Master Sport 386SX | 2Meg | ZA-300 1 | 114 00 |
| Zenith Master Sport SL SLE, 600 620 625NL | 2Meg | ZA-4 4 | 104 00 |
| Zenith Super Sport 286 286E | 1Meg | ZA 180-56 | 99 00 |
| 286E, SX | 2Meg | ZA 180-64 | 119 00 |
| SX Alpha/SX Beta | 2Meg | ZA-180 86/ZA-180-87 | 119 00 |
| Zenith Z Note 425LN LNC LNP | 4Meg/8Meg/16Meg | | 178/329/610 |
| Zenith Z Star 4/33 | 2Meg/8Meg | | 119/389 |
| Zenith Z Star EX | 4Meg/8Meg/16Meg | | 178/329/610 |

## LASER PRINTER MEMORY UPGRADES

| AMOUNT UPGRADED | DK 8d | 256k | 1 | 2 | 3 | 3 5 | 4 | 5 | 6 | 8 | 16 | 32 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Brother 630 631 641 645 | – | | 89 | 135 | – | – | – | – | – | – | – | – |
| Canon LBP 430 | – | – | 89 | – | – | – | 129 | | – | – | – | – |
| Canon LBP 860 | – | – | – | 99 | – | – | 179 | – | – | 349 | 689 | 1249 |
| Canon LBP4 4Lite 4plus | | – | 129 | 179 | – | – | – | – | – | – | – | – |
| Epson 6000 Action Laser | – | – | – | 129 | – | – | 228 | – | – | – | – | – |
| Epson Action Laser 1100 1600 | – | – | 69 | 99 | – | – | 168 | – | – | 379 | 566 | – |
| Epson Action Laser II | – | – | 89 | – | 208 | – | – | 327 | – | – | – | – |
| Epson 8000 1800 4000 4100 4300 | – | – | 89 | – | 208 | – | | 327 | – | Call | Call | Call |
| ***Epson 1000, 1500 5000 5200*** | – | – | – | ***109*** | – | – | ***218*** | – | – | – | – | – |
| HP 2 2D– | – | – | – | 89 | – | – | 179 | – | – | – | – | – |
| HP 3 3D 3P 2P 2P+ | – | – | – | 89 | – | – | 149 | – | – | – | – | – |
| HP 4 4M 4SI 4SIMX | – | – | – | 89 | – | – | 149 | – | – | 299 | – | – |
| HP 4P 4PLUS 4MPm 1600 1600CM | – | – | – | – | – | – | 129 | – | – | 238 | – | – |
| HP 4L | – | – | 59 | – | – | – | – | – | – | – | – | – |
| HP 3SI | – | – | 89 | – | – | – | 169 | – | – | 299 | – | – |
| HP 4SI | | – | – | 89 | – | – | 149 | – | – | 289 | – | – |
| HP 5L | – | – | 89 | 129 | – | – | 219 | – | – | 399 | – | – |
| HP 5P | – | – | – | 88 | – | – | 149 | – | – | 299 | 408 | – |
| HP Design Jet 600 650 200 | – | – | – | 89 | – | – | 149 | – | – | 290 | – | – |
| HP Deskjet 500 500C 510 550 560 | | 49 | – | – | – | – | – | – | – | – | – | – |
| HP Deskjet 1200C 1200C/P | – | | – | 89 | – | – | 148 | – | – | 299 | – | – |
| HP Paintjet XL300 | 89 | – | – | – | – | – | 249 | – | – | 428 | 837 | – |
| IBM Laser 4019 4019E | – | – | – | – | – | 169 | – | – | – | – | – | – |
| IBM Laser 4029 4037 | – | – | – | – | – | – | 169 | – | – | – | – | – |
| IBM Laser 4039 4079 | – | – | – | 99 | – | – | 169 | – | – | 350 | – | – |
| Konica LP-3110 | – | – | 119 | 189 | 239 | – | – | – | – | – | – | – |
| Lexmark Optra L, LX R RX | – | – | – | – | – | – | 139 | – | – | 299 | 466 | 872 |
| Lexmark Valuwriter 300 600 | – | – | 59 | 89 | – | – | 149 | – | – | – | – | – |
| Lexmark Winwriter 200 400 600 | | – | 59 | 89 | – | – | 149 | – | – | – | – | – |
| NEC 90 290 | – | – | – | 119 | – | – | – | – | – | – | – | – |
| NEC 95 97 | – | – | | 98 | – | – | – | – | – | – | – | – |
| Oki 400 | – | – | – | 104 | 168 | – | 219 | – | – | – | – | – |
| Oki 400E 400EX 410E, 410EX | – | – | 89 | 129 | – | – | – | – | – | – | – | – |
| Oki 830 840 | – | – | – | 109 | – | – | – | – | – | – | – | – |
| Packard Bell PB 9500 | – | – | – | 139 | – | – | 227 | – | – | – | – | – |
| Packard Bell 9815 | – | – | – | 139 | – | – | 229 | – | – | – | – | – |
| Panasonic 4420/4450i | – | – | – | 128 | – | – | 229 | – | – | – | – | – |
| Panasonic 4410/4430 | – | – | – | 119 | – | – | 195 | – | – | – | – | – |
| Panasonic 4450 | – | – | 99 | – | – | – | – | – | – | – | – | – |
| Panasonic 4400/5400 | – | – | 89 | 129 | – | – | 228 | – | – | – | – | – |
| Panasonic 4440 5410 | – | – | 89 | 128 | – | – | 228 | – | – | – | – | – |
| Sharp 9400 9460 9600, 9700E | – | – | 88 | 129 | – | – | 229 | – | – | – | – | – |
| Sharp 9500 E H 9700 H | – | – | 78 | – | – | – | 259 | – | – | – | – | – |
| TI XL/PS17/PS35 | – | – | 49 | – | – | – | – | – | – | – | – | – |
| TI Microlaser Pro E Powerpro Pro 600 | – | – | 88 | 139 | – | – | 229 | – | – | 428 | – | – |
| TI Microwriter | – | – | 78 | 159 | – | – | – | – | – | – | – | – |

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|---|---|---|---|---|
| CFS635A | 635MB | 14MS | IDE | $185 335 |
| CFS850A | 650MB | 14MS | IDE | 190-340 |
| CFS1081A | 1 1MB | 14MS | IDE | 220-37D |
| CFS1275A | 1 3GB | 14MS | IDE | 249-309 |
| CFS1621A | 1 6MB | 14MS | IDE | 289-339 |
| CFP1080S | 1 08GB | 11MS | SCSI-2 | 255-38D |
| CFP2105S | 2 1GB | 9MS | SCSI-2 | 609-734 |
| CFP2107S | 2 1GB | 9MS | SCSI-2 | 839-764 |
| CFP4207S | 4 2GB | 9MS | SCSI 2 | 939 1064 |

### Quantum

| FIREBALL SERIES-3 YEAR WAR. | | | | INT EXT |
|---|---|---|---|---|
| 31280FBA | 1 2GB | 12MS | IDE | 236-389 |
| 31080FBS | 1 2GB | 12MS | FSCSI 2 | 275-400 |
| **CAPELLA SERIES-5 YEAR WAR.** | | | | **INT-EXT** |
| VP32210S | 2 2GB | 8 5MS | SCSI | 669-794 |
| **TRAIL BLAZER SERIES-3 YEAR WAR.** | | | | **INT-EXT** |
| 30850TRA | 850MB | 12MS | IDE | 193 343 |
| 30850TRS | 850MB | 12MS | FSCSI 2 | 197 223 |
| **ATLAS SCSI 2 SERIES-5 YEAR WAR** | | | | **INT-EXT** |
| XP32150S | 2 1GB | 8MS | 7200RPM | 819-950 |
| XP34300S | 4 2GB | 8MS | 7200RPM | 1029-1160 |
| **GRAND PRIX SCSI 2 SERIES-5 YEAR WAR** | | | | **INT-EXT** |
| GP3401 | 4 3GB | 8 6MS | 7200RPM | 872 1097 |
| **EMPIRE-II SERIES-3 YEAR WAR.** | | | | **INT-EXT** |
| EMP32181S | 2 1GB | 8 9MS | 3 5"X1" | $CALL |
| EMP34350S | 4 4GB | 8 9MS | 3 5"X1" | CALL |
| EMP38100S | 9 1GB | 8 9MS | 3 5" | CALL |

### HEWLETT PACKARD

| FACTORY NEW-5 YEAR WARRANTY | | | | INT EXT |
|---|---|---|---|---|
| C3725S | 2 1GB | 9 5MS | SCSI | 889-794 |

### Maxtor

| FACTORY NEW-2 YEAR WARRANTY | | | | INT EXT |
|---|---|---|---|---|
| M7850AV | 853MB | 12MS | IDE | $185-345 |
| M71260AV | 1 2GB | 12MS | IDE | 249-399 |
| M71628AP | 1 6GB | 12MS | IDE | 265-413 |
| MXT540S | 540MB | 8 5MS | SCSI | 199-224 |

### MICROPOLIS

| FACTORY NEW-5 YEAR WARRANTY | | | | INT EXT |
|---|---|---|---|---|
| MC2210A | 1 05GB | 10MS | IDE | $349-499 |
| MC4110 | 1 05GB | 9MS | SCSI 2 | 650 775 |
| MC4221 | 2 05GB | 8 5MS | SCSI 2 | 589 714 |
| MC1938 | 3 0GB | 11MS | SCSI-2 | 650 999 |
| MC3243 | 4 3GB | 8MS | SCSI 2 | 969-1094 |
| MC1991 | 9 0GB | 11MS | SCSI 2 | 1889-2244 |
| MC2217AV | 1 75GB | 10MS | SCSI AV | 875-1823 |
| MC4221AV | 2 05GB | 8 5MS | SCSI-AV | 899-824 |
| MC3243AV | 4 3GB | 8 5MS | SCSI AV | 1D58 1200 |
| MC1991AV | 9 1GB | 10MS | SCSI AV | 2119-2264 |

### NEC

| FACTORY NEW-3 YEAR WARRANTY | | | | INT EXT |
|---|---|---|---|---|
| D3727 | 1 1GB | 11MS | IDE | $245 305 |
| D3747 | 1 6GB | 11MS | IDE | 259-409 |
| D3827 | 1 1GB | 11MS | SCSI | 225-350 |
| D3847 | 1 6GB | 11MS | SCSI | 279-404 |

### digital

| FACTORY NEW-2 YEAR WARRANTY | | | | INT EXT |
|---|---|---|---|---|
| DSP3210 | 2GB | 9 5MS | SCSI | $799-949 |

### FUJITSU

| FACTORY NEW-5 YEAR WARRANTY | | | | INT EXT |
|---|---|---|---|---|
| M1614T | 1 1GB | 11MS | IDE | 199 349 |
| M1606T | 1 1GB | 9 5MS | IDE | 235-385 |
| M1606S | 1 1GB | 13MS | SCSI | 235-360 |
| M2915S | 2 1GB | 8 5MS | SCSI | 642 767 |
| M2932S | 2 1GB | 10MS | SCSI | 579-704 |
| M2934S | 4 3GB | 10MS | SCSI | 899-1024 |

### IBM STANDARD & PS2

| | | | INT EXT |
|---|---|---|---|
| 1 0GB | 10MS | SCSI | $390-49D |
| 2 1GB | 7 5MS | SCSI | 899-1049 |
| 4 3GB | 11MS | SCSI | 1396-1498 |
| 527MB | 12MS | IDE | 185-335 |
| 1 05GB | 10 5MS | IDE | 269-318 |
| **PS/2 50, 50Z, 6N, 70, 8N, P70, 55SX** | | | |
| 630MB | 12MS | IDE | 399 |
| 1 2GB | 12MS | SCSI | 499 |
| **MICROCHANNEL CONTROLLER** | | | |
| IDE | 169 | SCSI-2 | $179 |
| **IBM PS/2 INTERNAL DRIVE KITS** | | | |
| **30-0000, 30-286, 25-0000, 25-286** | | | |
| 630MB | | IDE | 348 |
| 1 0GB | | IDE | 449 |

### WESTERN DIGITAL

| FACTORY NEW-3 YEAR WARRANTY | | | | INT EXT |
|---|---|---|---|---|
| WDAC2635 | 635MB | 11MS | IDE | $179-329 |
| WDAC2850 | 850MB | 10MS | IDE | 190-340 |
| WDAC31000 | 1GB | 10MS | IDE | 229-370 |
| WDAC31200 | 1 2GB | 10MS | IDE | 265-415 |
| WDAC31600A | 1 6GB | 9MS | IDE | 335-485 |

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### Seagate

| FACTORY NEW 1-5 YEAR WARRANTY | | | | INT EXT |
|---|---|---|---|---|
| ST3630A | 630MB | 14MS | IDE | $185-335 |
| ST5850A | 850MB | 11MS | IDE | 195-345 |
| ST51080A | 1 05GB | 10 5MS | IDE | 219-369 |
| ST31640A | 1 6GB | 10 5MS | IDE | 359-484 |
| ST32140A | 2 2GB | 10MS | IDE | 385-510 |
| ST31231N | 1 0GB | 10MS | SCSI-2 | 339-464 |
| ST51080N | 1 05GB | 10 5MS | SCSI-2 | 219-334 |
| ST12400N | 2 1GB | 9MS | SCSI 2 | 650 775 |
| ST32430N | 2 1GB | 10MS | SCSI 2 | 619 744 |
| ST43400N | 3 5GB | 11MS | SCSI-2 | 650-775 |
| ST15230N | 4 2GB | 9MS | SCSI-2 | 915 1040 |
| ST410800N | 9 0GB | 11MS | SCSI 2 | 2069 2269 |
| **SCSI-BARRACUDA • 7200 RPM** | | | | **INT EXT** |
| ST32550N | 2 1GB | 8MS | SCSI-2 | 689-815 |
| ST15150N | 4 2GB | 8MS | SCSI-2 | 1149-1274 |

### WIDE SCSI HARD DRIVES

**CONNER**

| FACTORY NEW-5 YEAR WARRANTY | | | | |
|---|---|---|---|---|
| 1060W | 1 0GB | 9MS | 3 5X1" | $599 |
| 21075W | 2 1GB | 8 5MS | 5400RPM | 739 |
| 2107W | 2 1GB | 8 5MS | 7200RPM | 776 |
| 4207W | 4 2GB | 9MS | 7200RPM | 1189 |

**Seagate**

| FACTORY NEW-5 YEAR WARRANTY | | | | |
|---|---|---|---|---|
| ST31230W | 1 0GB | 9MS | 3 5X1" | $536 |
| ST32430W | 2 1GB | 9MS | 3 5X1" | 782 |
| ST32550W | 2 1GB | 8MS | 3 5X1" | 809 |
| ST15230W | 4 3GB | 9MS | 3 5X1" | 1042 |
| ST15150W | 4 3GB | 8MS | 3 5" | 1346 |
| ST410800W | 9 0GB | 11MS | 5 25" | 2279 |

**Quantum**

| FACTORY NEW-5 YEAR WARRANTY | | | | |
|---|---|---|---|---|
| XP32150W | 2 1GB | 8MS | 3 5X1" | $840 |
| VP32210W | 2 2GB | 8 5MS | 3 5X1" | 728 |
| GP3430W | 4 3GB | 8 6MS | 3 5" | 1078 |
| XP34300W | 4 3GB | 8MS | 3 5" | 1258 |

**MICROPOLIS**

| FACTORY NEW-5 YEAR WARRANTY | | | | |
|---|---|---|---|---|
| MC4221W | 2 05GB | 8 5MS | LP3 5 | $745 |
| MC3243W | 4 30GB | 8 5MS | 3 5 | 1069 |
| MC1991W | 9 10GB | 10MS | FH | 2099 |
| **WIDE AUDIO VISUAL TUNED DRIVES** | | | | |
| MC4221WAV | 2 05GB | 8 5MS | LP3 5 | $799 |
| MC3243WAV | 4 30GB | 8 5MS | 3 5 | 1139 |
| MC1991WAV | 9 10GB | 10MS | FH | 2199 |

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| PENTIUM-166 | 105 | 215 |
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| 30 PIN PARITY/9-BIT | |
|---|---|
| 4MB X 9-70NS SIMM 3 CHIP | $120 |
| 4MB X 9-80NS SIMM 3 CHIP | 125 |
| 4MB X 9-80NS SIMM 9 CHIP | 125 |
| 4MB X 9-70NS SIMM 9 CHIP | 130 |
| 4MB X 9-60NS SIMM 9 CHIP | 135 |
| 1MB X 9-100NS 9 CHIP SIMM | [illegible] |
| 1MB X 9-80NS 3 CHIP SIMM | 30 |
| 1MB X 9-80NS 9 CHIP SIMM | [illegible] |
| 1MB X 9-70NS 3 CHIP SIMM | 35 |
| 1MB X 9-70NS 9 CHIP SIMM | [illegible] |
| 1MB X 9-60NS 3 CHIP SIMM | 35 |
| 1MB X 9-60NS 9 CHIP SIMM | [illegible] |
| 16MB X 9-70NS SIMM | 450 |
| 16MB X 9-60NS SIMM | [illegible] |
| 256K X 9-80NS SIMM | [illegible] |
| 256K X 9-70NS SIMM | 14 |
| **30 PIN NON-PARITY/8 BIT** | |
| 1MB X 8-80NS SIMM | 30 |
| 1MB X 8-70NS SIMM | 30 |
| 4MB X 8-80NS SIMM | 125 |
| 4MB X 8-70NS SIMM | 125 |
| 4MB X 8-60NS SIMM | 125 |
| **30 PIN 9 BIT SIPPS** | |
| 1MB X 9-100NS SIPP | 30 |
| 1MB X 9-80NS SIPP | 40 |
| 1MB X 9-70NS SIPP | 40 |
| 1MB X 9-60NS SIPP | 40 |
| 256K X 9-70NS SIPP | 20 |
| **72 PIN MEMORY** | |
| 256 X 36-1MB-70NS | 40 |
| 512 X 36-2MB-70NS | 70 |
| 512 X 36-2MB-60NS | 70 |
| 1X36-4MB-70NS/60NS LOGIC | 120/125 |
| 1X36-4MB-70NS/60NS MAJOR | 130/135 |
| 2X36-8MB-70NS/60NS LOGIC | 220/225 |
| 2X36-8MB-70NS/60NS MAJOR | 240/245 |
| 4X36-16MB-70NS/60NS LOGIC | 395/400 |
| 4X36-16MB-70NS/60NS MAJOR | 450/460 |
| 8X36-32MB-70NS LOGIC | 850 |
| 8X36-32MB-60NS LOGIC | 850 |
| 8X36-32MB-70NS MAJOR | 950 |
| 8X36-32MB-60NS MAJOR | [illegible] |
| 16X36-64MB-70NS/60NS | 2595/2045 |
| **EDO MEMORY** | |
| 4MB/8MB EDO | 120/240 |
| 16MB/32MB EDO | 480/890 |
| 1 X 32-4MB-70NS/60NS | 105/110 |
| 2 X 32-8MB-70NS/60NS | 205/210 |
| 4 X 32-16MB-70NS/60NS | 395/400 |
| 8 X 32-32MB-70NS/60NS | 850/880 |

**$28.50 PER MEGABYTE**
Price is based on per 1MB price. Modules sold as 16 MB Modules total price is $512 for 4x32 70ns 16MB

### NOTEBOOK HARD DRIVES

**TOSHIBA**

| NOTEBOOK DRIVES/1 YEAR WARRANTY OR 2.5" | | | | |
|---|---|---|---|---|
| MK1924FCB | 524MB | 15MS | IDE | $399 |
| MK1924FC | 540MB | 15MS | SCSI | 449 |
| MK1926FC | 810MB | 13MS | IDE | 388 |
| MK2720FC | 1 3GB | 13MS | IDE | 575 |

**IBM**

| | | | |
|---|---|---|---|
| IBMHDN520 | 520MB | IDE | $399 |

**Seagate**

| | | | |
|---|---|---|---|
| ST9096AG | 90MB | 16MS | $99 |
| ST9300AG | 260MB | 16MS | 169 |
| ST9385AG | 340MB | 16MS | 249 |
| ST9420AG | 420MB | 16MS | 289 |
| ST9548AG | 524MB | 16MS | 329 |
| ST9816AG | 810MB | 16MS | 476 |

### REMOVABLES/OPTICALS

**SYQUEST REMOVABLE CARTRIDGE DRIVES**

| | |
|---|---|
| 270MB SCSI INT/EXT | $375-495 |
| 270MB CART SINGLES/5 PACK | 73-350 |
| 270 PARALLEL PORT | 549 |
| 270MB INTERNAL IDE | 375 |
| CARTS 44MB/88MB | 54-69-75-85 |
| CARTS 105MB/200MB | 54-69-75-85 |
| 5200 200MB INT/EXT | 399-599 |

**FUJITSU REWRITABLE EXTERNAL OPTICAL DRIVES**
230MB 3 5 OPTICAL DRIVE INT/EXT $499-579
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### FLOPPY DRIVES

**TEAC**
1 44MB 3 5"/1 2MB 5 25" $37-47
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### EXT. SCSI CASES

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|---|---|
| Half Ht for 3 5 IDE Drives for parallel port | $148 |
| Half Ht for 5 25" or 3 5" Devices (1Bay) | 89 |
| Half Ht for for CD-ROM s w/Audio Jacks | 99 |
| 5 25" Full Ht for (1) FH or (2) HH Devices (2 Bay) | 199 |
| 5 25" Double Full Ht for (2) FH Devices (4 Bay) | 299 |
| 5 25" 3 Full Ht & 1HH or 7HH Devices (7 Bay) | 399 |
| 3 50" HH (4Bays) 3 5" Devices | 299 |

### CPU CASES

| | | |
|---|---|---|
| DESKTOP CASE 230 w/ps | 4 Bays | $65 |
| MINI TOWER, 230 w/ps | 5 Bays | 65 |
| MID TOWER 230 w/ps | 6 Bays | 95 |
| FULL TOWER, 230 w/ps | 7 Bays | 125 |
| SUPER TOWER 300 w/ps | 9 Bays | 250 |

### NETWORKING TERMINALS
Terminal Keyboard $145
Wyse 60 amber/green/white 329

### KEYBOARDS

| | |
|---|---|
| MITSUMI 101 | $25 |
| FOCUS 2001 W/COVER | 40 |
| FOCUS 7000 KEYTRACK | 69 |
| FOCUS 9000 PROGRAMMABLE | 65 |

### MOUSES
2 BUTTON/3 BUTTON/MICROSOFT $20-30-35

### CPU FANS
486 & PENTIUM CPU FANS $20

### VIDEO BOARDS

**DIAMOND MULTIMEDIA**

| | |
|---|---|
| SpeedstarStar Pro 1100 ISA 1MB | $95 |
| Stealth SE 2MB, PCI VLB | 105 |
| SpeedstarStar 2120 ISA 1MB | 119 |
| SpeedstarStar 2220 ISA 2MB | 175 |
| Stealth 64 2120 DRAM 1MB PCI VLB | 119 |
| Stealth 64 2220 DRAM 2MB PCI VLB | 175 |
| Stealth 64 2120XL 1MB PCI VLB | 149 |
| Stealth 64 2200XL 2MB PCI VLB | 199 |
| Stealth 64 Video 1MB VLB | 169 |
| Stealth 64 Video 2MB VLB | 229 |
| Stealth 64 Video VRAM 2MB PCI | 329 |
| Stealth 64 Video VRAM 2MB VLB | 329 |
| Stealth 64 Video PCI VRAM 4MB | 469 |
| Vipor Pro Video PCI 4MB | 585 |

**ATI SPECIAL VIDEO BOARD** ISA, VRAM, 2MB, 64 BIT 5 PACK $239 EA.

| | |
|---|---|
| ATI Graphics Xpression 2MB ISA, VLB PCI | $199 |
| ATI WinTurbo VRAM 2MB ISA VLB PCI | 285 |
| Graphics Pro Turbo 2MB ISA VLB PCI | 305 |
| Graphics Pro Turbo 4MB ISA VLB PCI | 445 |

**BOCA**
Voyager 1MB VL-Bus $99
Voyager 2MB VL-Bus 165

**#9 GXE Number Nine Computer Corporation**

| | |
|---|---|
| #FX Vision 330 1MB DRAM PCI VLB | $139 |
| #FX Vision 330 2MB DRAM PCI VLB | 179 |
| #FX Motion 531 1MB DRAM PCI VLB | 179 |
| #FX Motion 531 2MB DRAM PCI VLB | 225 |
| #FX Motion 771 2MB VRAM PCI VLB | 295 |
| #FX Motion 771 4MB VRAM PCI VLB | 445 |
| #GXE Pro 1600 2 MB VRAM PCI VLB | 546 |
| #GXE Pro 1600 4 MB VRAM PCI VLB | 719 |
| Imagine 128 4MB VRAM | 599 |
| Imagine 128 8MB VRAM | 1299 |

**TRIDENT**
SVGA 1024 X 768 1MB ISA VGA card $88
SVGA 1024 X 768 1MB VLB VGA card 98

**SVGA**
SVGA 256K ISA $38
SVGA 512K 1024 X 768 ISA 50
SVGA 1MB 1024 X 768 ISA 88

### TAPE BACKUPS

**MicroSolutions BACKPACKS**

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|---|---|
| DOUBLE SPD PARALLEL PORT CD ROM DRIVE | $339 |
| QUAD SPD PARALLEL PORT CD ROM DRIVE | 399 |
| DSKTTE DRV 1 2 5 25 DSKTTE DRV 1 4 3 5 | 175 |
| BACKPACK 800MB TAPE DRIVE | 246 |
| BACKPACK 420MB HARD DRIVE | 489 |

**COLORADO MEMORY SYSTEMS**

| | |
|---|---|
| Jumbo 1400 Internal | $229 |
| Trakker 700 parallel port | 329 |
| HP Colorado T1000 | 165 |
| DJ 50T 1360MB Tape Drive | 266 |

**EXABYTE**

| | | |
|---|---|---|
| 4200C | 4GB TAPE INT/EXT | $877-1027 |
| 8205XL | 3 5-7GB TAPE INT/EXT | 1325-1549 |
| 8505XL | 7-14GB TAPE INT/EXT | 2200-2498 |

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|---|---|
| C1534A 2 0GB TAPE INT/EXT | $662-762 |
| 35470A 2 0GB TAPE INT/EXT | 749-649 |
| 1538 4GB TAPE INT/EXT | 899-999 |
| 1533 4 8GB TAPE INT/EXT | 999-1099 |
| 4MM 90MT DAT CART (1/5 PK) | 19-88 |
| 4MM 120MT DAT CART (1/5PAK) | 30-149 |
| 3 5"-5 25" CONVERSION KIT | 39 |

**IOMEGA**

| | |
|---|---|
| Bernoulli 230MB Insider SCSI | 474 |
| Bernoulli 230MB Transportable SCSI | 474 |
| 90 MB/150MB/230MB Cartridge | 99 |

**CONNER**

| | |
|---|---|
| TapeStor 250MB Parallel Port | $199 |
| TapeStor 420MB Parallel Port | 200 |
| TapeStor 850MB Internal | 188 |
| TapeStor 850MB Parallel Port | 330 |

### SCSI-IDE CONTROLLERS

**FUTURE DOMAIN**
TMC1680 SVP 16 Bit 7HD/4FD 138
MCS700 16 Bit Micro Channel SCSI 159

**adaptec**

| | | |
|---|---|---|
| 1505 | CD ROM 16-Bit SCSI Kit | $75 |
| 1515 | 16 Bit ISA SCSI 2 KIT | 99 |
| 1520 | 16 Bit ISA SCSI 2 (7 DEVICE CARD) | 99 |
| 1522 | 16 Bit 7HD/2FD KIT | 138 |
| 1522 | 16 Bit 7HD/2FD Card Only | 118 |
| 1530PK | 16 Bit ISA to FAST SCSI-II Kit | 189 |
| 1542 | Bus MasterCard Only | 210 |
| 1542CPK | Bus Master Kit | 248 |
| 1640K | MicroChannel for PS/2 7HD | 299 |
| 1570 | ISA SCSI AUDIO KIT | 299 |
| 2940K | 32 Bit PCI SCSI 2 Kit | 294 |
| 2940WK | 32-Bit PCI Wide Kit | 369 |
| 2742T | EISA KIT 14HDs | 369 |
| 2742W | FAST WIDE SCSI CARD | 369 |
| 2825VL | Enhanced SCSI/IDE Kit | 179 |
| 2842A | VL SCSI 2 VESA | 259 |
| 1460 | Slim SCSI PCMCIA SCCSI Card | 289 |
| 3940 | Dual Channel PCI Controller Kit | 469 |
| 3940W | 32 BIT WIDE PCI DUAL CHANNEL KIT | 475 |
| 3985 | Kit PCI RAID controller for netware | 839 |
| T160 | 16-Bit SCSI | 88 |
| T348 | Parallel Port to SCSI Plus | 149 |
| T358 | Parallel Port to SCSI Plus Enhanced | 199 |

**Acculogic**
s-IDE 2 PCI 2HD/Enhanced IDE 39
s IDE-3 2HD/2FD 49
s IDE4+ 2HD/2FD 56

**DATA TECHNOLGY**

| | | |
|---|---|---|
| 2278D+ | VESA 4 IDE/EIDE Device FDD 16550 UART SERIAL Parallel & Game Ports | $30 |
| 2278E | Same as 2278D+ W/ECP/EPP Port | 35 |
| 3130PCI | PCI IDE/EIDE (4 Devices) | 30 |
| 2278VL | 32 Bit VLB/IDE w/highspeed I/O | 35 |
| 3270 | PCI SCSI | 128 |
| 3270VL | VLB SCSI | 128 |

**PROMISE TECHNOLOGY, INC.**
IDE & SCSI CACHE CONTROLLERS

| | | |
|---|---|---|
| DC200 | 2FD 4HD ISA (exp to 16MB) | $99 |
| DC2300+ | Enhanced IDE VLB w/16550 I/o | 69 |
| 5030 | 32 Bit PCI BusMaster IDE Caching | 159 |
| DC440 | BusMaster SCSI/IDE VLB w/10 | 179 |
| DC540 | BusMaster PCI SCSI WIDE (no cble) | 169 |

**gsi**
HI PERFORMANCE IDE CONTROLLERS

| | | |
|---|---|---|
| 11 | 8 Bit 4FD & 250MB Tape Accel Card | $58 |
| 16 | Co Exist High Perf IDE Card | 55 |
| 21 | 2HD 4FD (up to 2 66M) | 69 |
| 32 | 8Multi-port IDE Flpy Tape & I/O Accel | 129 |

**SUPER CONTROLLERS**
IDE CONTROLLERS

| | | |
|---|---|---|
| 200 | 2HD/2FD Controller Cables | $22 |
| 211 | 2HD/2FD w/2 serial/1 Par/1 Game | 29 |
| 243 | 2HD/2FD VLB EIDE w/io 2s/1p/1g | 49 |
| 400 | 16550 2HD/2FD 2-16550 2s/1p/1g ISA | 95 |
| 500 | 16550 2HD/2FD 2-16550 2s/1p/1g VLB | 99 |

**Q-LOGIC**

| | | |
|---|---|---|
| QL ISA FL | 16 Bit ISA | 138 |
| QL-VLB-FL | 32 Bit VLB | 205 |
| QL EISA/FL | 32 Bit EISA | 229 |
| QL PCMCIA | PCMCIA | 189 |
| QL-VLB FL | 32 Bit PCI Basic Entry Level | 129 |
| QL PCI-10 | 32 Bit ID-PCI Wide SCSI-2 | 299 |

**BusLogic**

| | | |
|---|---|---|
| KT445C | 32-Bit VLB Fast SCSI-2 Kit | $199 |
| KT545C | 16-Bit ISA BusMaster Fast SCSI-2 Kit | 209 |
| KT742A | 32-Bit EISA SCSI 2 Kit | 289 |
| KT747C | 32 Bit EISA Fast SCSI 2 Kit | 299 |
| BT757S | 32 Bit EISA Fast Wide SCS Card | 349 |
| KT948C | 32-Bit PCI Fast SCSI 2 Kit | 290 |
| KT956C | 32 Bit PCI Fast Wide SCSI 2 Kit | 329 |
| **IDE CACHE CONTROLLERS** | | |
| KT510A | ISA/IDE Cache Controller | 95 |
| KT410A | VESA/IDE Cache Controller | 125 |
| KT910A | PCI/IDE Cache Controller | 188 |

### CD ROMS

**NEC** — NEC-SPECIAL 4X Speed SCSI-5PK $249 EA

| | |
|---|---|
| NEC 2V1 Int IDE | $179 |
| NEC CDR511 Quad Speed SCSI Int | 279 |
| NEC CDR512 Six Speed SCSI-2 Int | 329 |

**DIAMOND NEW**
Ultra 6X • Super fast 6X CD ROM IDE $385

**PLEXTOR**

| | | |
|---|---|---|
| PX-43CS | Internal 4-Speed 256 Cache | $279 |
| PX-45CS | External 4-Speed 256 Cache | 349 |
| PX-63CS | Int 6 Speed 256K Cache | 355 |

**CHINON**
CDS545 Quad Speed IDE Internal $109
CDS545 Quad Speed IDE External 329

**SONY** — SONY-SPECIAL 4X Speed SCSI-5PK $199 EA

| | |
|---|---|
| CDU-55E 2X Int/Ext | $99 |
| CDU-76SB SCSI 4X Int/Ext | 219-364 |
| CDU-76 IDE 4X Int/Ext | 169-319 |

**TEAC**

| | | |
|---|---|---|
| CD-55AB | SuperQuad 4X AT Drive | $189 |
| CF 506A | ComboDuad 4X CD w/1 44 flpy | 239 |
| CD-58E | Six Speed Int | 21D |

**TOSHIBA**
XM5302A Quad Speed IDE Int/Ext $179-329
XM3701 Six Speed SCSI Int/Ext 305-430

**MITSUMI**
CRMC FX400 Quad Speed Int/Ext IDE $119-269

### SCSI-IDE CABLES

| HARD DRIVE EXTERNAL CABLES | |
|---|---|
| CENTRONICS 50 TO SCSI II | $5D |
| CENTRONICS 50 TO MAC 25-PIN | 25 |
| CENTRONICS 50 TO CENTRONICS 50 6FT | 25 |
| CENTRONICS 50 TO CENTRONICS 50 3FT | 2D |
| CENTRONICS TO DB-50 | 5D |
| DB-50 TO SCSI-II | 50 |
| DB-50 TO DB-50 | 50 |
| SCSI-II TO SCSI-II | 50 |
| FAST WIDE TO CENTRONICS EXT | 99 |
| 66 PIN WIDE TO WIDE 3FT EXT | 99 |
| **HARD DRIVE INTERNAL CABLES** | |
| SCSI 50-PIN RIBBON 2/3/4 DEVICE | $10-15-2D |
| SCSI 50-PIN RIBBON 5/6/7 DEVICE | 25-30-35 |
| SCSI FAST 66 PIN WIDE 3 CONN 2 DEVICE | 85 |
| SCSI FAST 68 PIN WIDE 5 CONN 4 DEVICE | 99 |
| SCSI FAST 68-PIN WIDE 8 CONN 7 DEVICE | 139 |
| IDE 40-PIN RIBBON 3 CONNS | 8 |
| FLOPPY & IDE CABLES SET | 11 |
| PASSIVE TERMINATOR | 20 |
| ACTIVE TERMINATOR | 50 |

### MODEMS

**Supra**

| | |
|---|---|
| Supra Express 14 4 Internal | $74-94 |
| Supra Express 14 4 External | 94 |
| Supra Express 28 8 Internal | 142 |
| Supra Express 28 8 External | 158 |
| Supra Standard 28 8 V 34 Internal | 174 |
| Supra Standard 28 8 V 34 External | 187 |

**PRACTICAL PERIPHERALS**

| | |
|---|---|
| 14 4 Fax/Modem Internal | $75 |
| 14 4 Fax/Modem External | 100 |
| 28 8 V34 Fax/Modem Internal | 199 |
| 28 8 V34 Fax/Modem External | 218 |
| 14 4 PCMCIA Fax/Modem | 165 |

**intel-PUREDATA**

| | |
|---|---|
| SatisFAXtion 200 Int | $229 |
| SatisFAXtion 400 Int | 299 |
| SatisFAXtion 400 Ext | 336 |

**BOCA**

| | |
|---|---|
| 14 4 Internal | $79 |
| 28 8 Internal V34 | 169 |
| 28 8 External V34 | 209 |

**Hayes**

| | |
|---|---|
| Accura V 42 FAST 14 4 Internal | $89 |
| Accura V 42 FAST 14 4 External | 108 |
| Accura V 34 FAST 28 8 Internal | 179 |
| Accura V 34 FAST 28 8 Externall | 182 |
| Optima V 32 w/voice Internal | 369 |
| Optima V 32 w/voice External | 415 |
| Optima V 32 FAST 14 4 PCMCIA Card | 189 |
| Optima V 32 FAST 28 8 PCMCIA Card | 289 |

**USRobotics**

| | |
|---|---|
| Sportster 14 4 Internal | $89 |
| Sportster 14 4 External | 109 |
| Sportster 28 8/V 34 Internal | 192 |
| Sportster 28 8/V 34 External | 209 |
| Sportster VI 28 8 V34 Int | 238 |
| Courier V 34 28 8/28 8 Internal | 387 |
| Courier V 34 28 8/28 8 External | 422 |
| Courier 28 8 PCMCIA V 34 | 469 |

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| 4X9-80-70-60 | 1X8-100-80-70-60 | 1,2,4X36-80-70-60 | 1,2X32-70-60 |
| 4X3-80-70-60 | 4X8-80-70-60 | 2,4,8,16X36-80-70-60 | 4,8,16X32-70-60 |
| | 16X8-80-70-60 | | |

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|---|---|
| 1MB X 1-100NS | $0.00 |
| 1MB X 1-80NS | 6.25 |
| 1MB X 1-70NS | 6.50 |
| 1MB X 1-60NS | 6.75 |
| 256K X 4-100NS | 6.00 |
| 256K X 4-80NS | 6.25 |
| 256K X 4-70NS | 6.50 |
| 256K X 4-60NS | 6.75 |

| CACHE MEMORY | | | |
|---|---|---|---|
| 8 X 8-15 | $5.00 | 32 X 8-25 | 7.00 |
| 8 X 8-20 | 4.50 | 64 X 1-10 | 10.00 |
| 8 X 8-25 | 4.00 | 128 X 8-20 | 33.00 |
| 32 X 8-15 | 10.00 | 128 X 8-25 | 30.00 |
| 32 X 8-20 | 8.00 | 128 X 8-15 | 40.00 |

**MATH CO-PROCESSORS**

| INTEL | | | | | |
|---|---|---|---|---|---|
| 8087 5MHZ | $40 | 80387DX-25 25MHZ | 75 | 83D87DX-33 33MHZ | 59 |
| 80287-10 10MHZ | 75 | 80387DX-33 33MHZ | 75 | 83D87DX-40 40MHZ | 69 |
| 80287XL-10 MHZ | 75 | 80487SX-25 | 345 | 83S87SX-16 16MHZ | 59 |
| 80387SX-16 16MHZ | 75 | **CYRIX** | | 83S87SX-20 20MHZ | 59 |
| 80387SX-20 20MHZ | 75 | 83D87DX-16 16MHZ | 59 | 83S87SX-25 25MHZ | 59 |
| 80387SX-25 25MHZ | 75 | 83D87DX-20 20MHZ | 59 | 287XL 8-20MHZ | 59 |
| 80387DX-20 20MHZ | 75 | 83D87DX-25 25MHZ | 59 | | |

**CPU'S**

| INTEL | | INTEL | | AMD | |
|---|---|---|---|---|---|
| 386DX-33 | $35 | 486DX4-100 | 150 | 386DX-40 | 45 |
| 486SX-25 | 45 | PENTIUM 66 | 150 | 486DX2-80 | 65 |
| 486SX-33 | 55 | PENTIUM 75 | 215 | 486DX2-80 | 69 |
| 486DX-25 | 75 | PENTIUM 90 | 315 | 486DX4-100 | 125 |
| 486DX-33 | 86 | PENTIUM 100 | 345 | **CYRIX** | |
| 486DX2-50 | 90 | PENTIUM 120 | 450 | 486DX2-80 | [illegible] |
| 486DX-50 | 140 | PENTIUM 133 | 625 | 486DX2-66 | [illegible] |
| 486DX2-66 | 135 | | | 486DX2-80 | [illegible] |

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**Austin Edge CD Notebook Standard Features:**

*Intel 430MX PCI Bus*

*Internal 3.5" Removable Diskette Drive, (Swappable w/ 2nd Battery or 4X CD-ROM)*

*32-Bit Local Bus Fast IDE*

*256K Pipeline Burst L2 Cache*

*16-Bit Stereo Business Audio*

*Built-in Microphone, Speaker & External Jacks for Line-In/Line-Out*

*Lithium Ion Battery*

*Touch Pad Mouse*

*Weight with Battery: 6.8 lbs.*

*Win '95 Plug n' Play BIOS*

*Windows® 95 Pre-Installed*

**Austin Edge XP Notebook Standard Features:**

*Intel 430MX PCI Bus*

*16-Bit Stereo Business Audio*

*Built-in Microphone, Speaker & External Jacks for Line-In/Line-Out*

*Integrated Pointing Stick Mouse*

*NiMH Battery (Second Battery Optional)*

*Weight with Battery: 5.5 lbs.*

*Win '95 Plug n' Play BIOS*

*Windows 95 Pre-Installed*

### It's a New Story of Portable Power

The name says it all. ***The Edge***. The Austin Edge. As soon as you watch it perform, you'll know this notebook gives you The Competitive Edge. It builds the foundation of its performance package on the Intel 430MX Chipset and includes high-end features like 256KB Pipeline Burst L2 Cache.

### Prices Low, Value High

The Edge comes in an impressive package, weighing just 6.8 lbs with the CD-ROM and battery. It's covered by a money-back guarantee and a one-year parts and labor warranty. Call Austin, and ***travel with confidence***.

**Batteries: The Lithium Ion Advantage**

"Lithium Ion batteries will give you 2 hours or more of continuous usage, even with a fully-loaded notebook. This compares with only 60 to 90 minutes for nickel hydride batteries."

Source: PC Magazine, July 1995

**Austin Edge CD-90**

*90MHz Intel Pentium Processor*

*11.3" TFT 800 x 600 Color Display*

*8MB RAM (expandable to 40MB)*

*810MB Hard Drive*

*32-Bit PCI Video – 2MB*

*4X Internal CD-ROM*

*28.8 Fax/Modem w/ Speaker Phone*

*Business Lease:* ***$135 / month***

***$3,535***

**Austin Edge XP-90**

*90MHz Intel Pentium Processor*

*10.4" DSTN Color Display*

*16MB RAM (expandable to 24MB)*

*810MB Hard Drive (Fast IDE Interface)*

*32-Bit PCI Video – 1MB*

*Internal 3.5" Diskette Drive (Removable for optional second battery)*

*Business Lease:* ***$103 / month***

***$2,712***

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intel inside pentium PROCESSOR

## Desktop Solutions

# DEMAND AUS
# FOR A BETTE

AUSTIN POWER PERFORMERS

***Austin Power System Standard Features:***

*75-, 100-, or 133 MHz Intel Pentium Processor*

*256K L2 Cache*

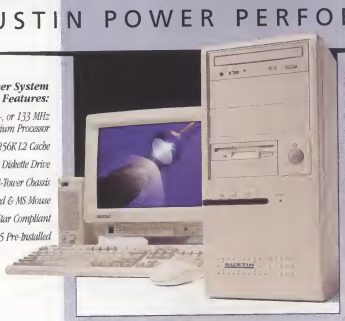
*3.5" 1.44MB Diskette Drive*

*Desktop or Mini-Tower Chassis*

*Win '95 Keyboard & MS Mouse*

*Energy-Star Compliant*

*Windows '95 Pre-Installed*



***Austin Power System 100***

*8MB RAM (expandable to 128MB)*

*850MB Enhanced IDE Hard Drive*

*64-Bit PCI Video Accelerator - 1MB*

*15" .28mm NI SVGA Monitor*

*Business Lease:* ***$63 / month***

***$1,649***

*133MHz processor -* ***add $125***

### Award-Winning Desktop Power

With the ***Power System 100***, Austin combines Pentium performance and incredible value. And ***PowerPLUS*** systems come with a host of features, including a choice of processors ranging from 100- to 166 MHz and 256KB L2 Write-Back Cache, as well as RAM capability up to 128MB.

### Call Now for Fast Delivery

We have systems ready to ship, and we offer almost endless configuration options, with software and peripherals that will make your Austin computer ***the ideal working partner***.

***Austin PowerPLUS System Standard Features:***

*100-, 133-, 150- or 166 MHz Intel Pentium Processor*

*256 to 512KB L2 Pipeline Burst Cache*

*3.5" 1.44MB Diskette Drive*

*Desktop or Mini-Tower Chassis*

*Win '95 Keyboard & MS Mouse*

*Energy-Star Compliant*

*Windows '95 Pre-Installed*

***Austin PowerPLUS-133***

*16MB EDO RAM (expandable to 128MB)*

*256KB L2 Pipeline Burst Cache*

*1.2GB Enhanced IDE Hard Drive*

*64-Bit PCI Video Accelerator - 2MB EDO RAM*

*6X IDE CD-ROM Drive*

*15" .28mm NI SVGA Monitor*

*16-Bit Audio, Stereo Speakers*

*Business Lease:* ***$94 / month***

***$2,499***

*166MHz processor -* ***add $350***

### AUSTIN ONLINE OFFERS

Connect with the Austin Direct home page and you'll find a complete catalog of Austin systems as well as hundreds of peripherals and software packages. With a few clicks, you'll access special offers on Austin systems as well as the latest info on new PC technology, support services, and product updates.

***http://www.austindirect.com/***

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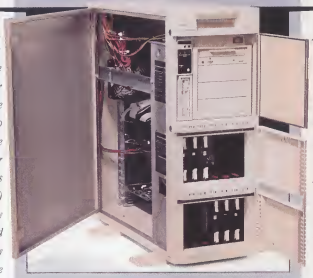
Business Lease!

## Server Solutions

# STIN SYSTEMS
# R BIG PICTURE

## AUSTIN DEPARTMENTAL SERVERS



***Austin Affinity XR Server Standard Features:***

*256K L2 Cache*
*Adaptec 2940W Drive Controller*
*4X SCSI CD-ROM Drive*
*16 Bit ISA Video*
*3.5" 1.44MB Diskette Drive*
*10Base-T PCI Network Adapter*
*3 ISA, 3 PCI Expansion Slots*
*Tower Chassis (26"H x 10" W x 25.5"D)*
*300W Power Supply*
*101-Key Keyboard*
*Three-Year Parts & Labor Warranty*
*One-Year On-Site Service*

***Austin Affinity XE and XE Pro Standard Features:***

*512K L2 Cache*
*Mylex PCI RAID Controller*
*4X SCSI CD-ROM Drive*
*3.5" 1.44MB Diskette Drive*
*16-Bit ISA Video*
*100Base-T PCI Network Adapter*
*Affinity XE: 6 EISA, 4 PCI Expansion Slots*
*Affinity XE Pro: 4 EISA, 6 PCI Expansion Slots*
*Tower Chassis (26"H x 10" W x 25.5"D)*
*500W Power Supply*
*101-Key Keyboard*
*Three-Year Parts & Labor Warranty*
*One-Year On-Site Service*
*Mylex Array Management Software and Austin's Novell NetWare Pre-Installed*

### Austin XE Pro Serves Up More Power

Expect more performance from an Austin Affinity XE Pro server, with quad ***150-***, ***180-***, or ***200MHz Pentium Pro Processors.*** The Affinity provides a powerful, reliable server for your department's database or application server. And as your organization grows, you can upgrade the expandable Affinity server to accommodate all your increased demands.

### An Affinity for Success

Austin gives you a choice in the Affinity server line, with the Austin Affinity XR, the Affinity XE, and the Affinity XE Pro. For maximum flexibility, the Affinity chassis is designed with up to 12 hot swappable hard drives for 2- or 4GB, 7200RPM drives and an enhanced, nine-fan cooling system. Each Affinity server offers easy access to internal components and comes complete ***with advanced server management software***.

intel inside
PENTIUM PRO PROCESSOR

***Austin Affinity XR-120***

*120MHz Intel Pentium Processor*
*16MB RAM – Expandable to 512MB*
*2 1GB Hot-Swappable Fast & Wide SCA Hard Drive – Expandable to 24GB*
*Business Lease:* ***$146 / month***

***$3,995***

***Austin Affinity XE-150***

*150MHz Dual Pentium Processor*
*64MB RAM – Expandable to 512MB*
*3 2GB Hot-Swappable Fast & Wide SCA Hard Drives Expandable to 48GB*
*Business Lease.* ***$451 / month***

***$12,746***

***Austin Affinity XE-Pro***

*180MHz Dual Pentium Processor*
*128MB RAM – Expandable to 1GB*
*5-2GB Hot-Swappable Fast & Wide SCA Hard Drive – Expandable to 24GB*
*Business Lease:* ***$694 / month***

***$19,995***

*Maximize Affinity XE reliability with hot-swap redundant power supply upgrade –* ***$995***

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**Please answer questions below**

**1. Where do you use your computer?** (Check one only):
1. ☐ Home 2. ☐ Business 3. ☐ Both

**2. What kinds of computers do you use?** (Check all that apply):
1. ☐ IBM/Compatible Laptop 2. ☐ IBM/Compatible Desktop 3. ☐ MAC

**3. Do you plan to buy any of the hardware or software mentioned below in the next three months?** (Check all that apply).

**HARDWARE**
1. ☐ PC
2. ☐ MAC
3. ☐ Laptop
4. ☐ Printer
5. ☐ Monitor
6. ☐ Disk/Tape Back-up
7. ☐ Add-in Board
8. ☐ Modem
9. ☐ Input Device
10. ☐ Local Area Network
11. ☐ UPS

**SOFTWARE**
12. ☐ Accounting
13. ☐ Spreadsheet
14. ☐ Personal Finance
15. ☐ Desktop Publishing
16. ☐ Word Processor
17. ☐ Database Manager
18. ☐ Graphics
19. ☐ Utility
20. ☐ Communications
21. ☐ Windows 95
22. ☐ Programming Language/ Compiler
23. ☐ Integrated/Multifunction
24. ☐ CAD
25. ☐ CD-ROM
26. ☐ On-Line Services

**4. From which of the following sources do you purchase personal computer products?** (Check all that apply):
1. ☐ Specialty Computer Retail Stores
2. ☐ Mail Order Firms
3. ☐ Direct from Manufacturers
4. ☐ Other

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*256K L2 Cache*

*Adaptec 2940W Drive Controller*

*4X SCSI CD-ROM Drive*

*16 Bit ISA Video*

*3.5" 1.44MB Diskette Drive*

*10Base-T PCI Network Adapter*

*3 ISA, 3 PCI Expansion Slots*

*Tower Chassis (26"H x 10" W x 25.5"D)*

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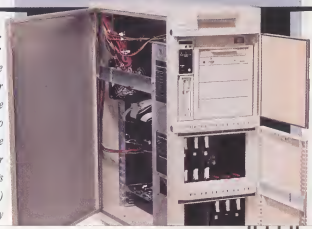

***Austin Affinity XR-120***

*120MHz Intel Pentium Processor*

*16MB RAM – Expandable to 512MB*

*2 1GB Hot-Swappable Fast & Wide SCA Hard Drive – Expandable to 24GB*

*Business Lease:* ***$146 / month***

***$3,995***

***Austin Affinity XE-150***

*150MHz Dual Pentium Processor*

*64MB RAM – Expandable to 512MB*

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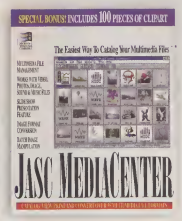


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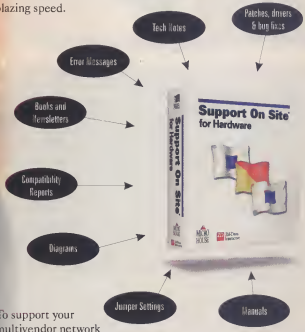


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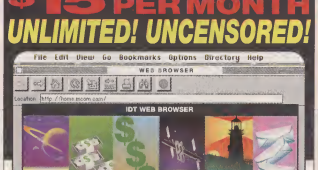


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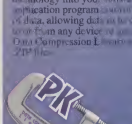


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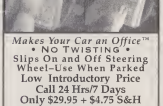

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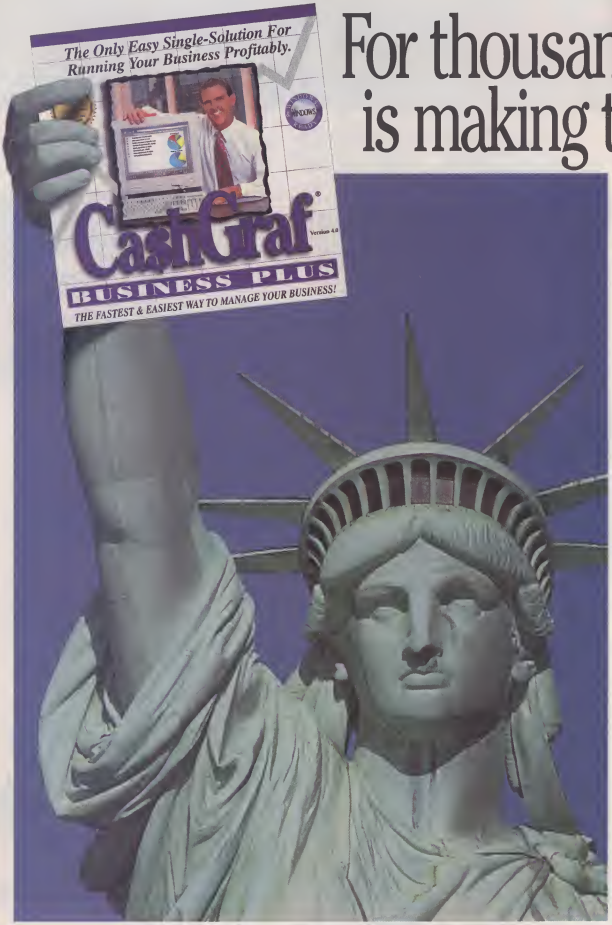

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# No More CD Juggling

A year ago you had to shell out serious bucks for a CD-ROM jukebox—around $1,000. There were only a few models to choose from, and those were strapped with lowly double-speed performance. Times have changed. CD-ROM jukeboxes are booming and prices have been slashed, some to under $300.

*PC Computing* examined jukeboxes from four major vendors—NEC Technologies, Pioneer New Media Technologies, Smart and Friendly, and Turtle Beach. The jukeboxes hold from four to seven discs simultaneously. NEC's offering surprised us by skipping the caddie/tray design and adding an easy-to-use input device that mimics

**Quadruple Quickness:** The MultiSpin 4x4 loads discs without a caddie.

**MultiSpin 4x4** / NEC Technologies / (800) 632-4636 / $279 est. street price / *Reader Service No. 478*

what you find in car stereos. The other jukeboxes came with trays or magazines. All offer some external controls, but none of them let you change a CD while playing or using another disc.

So which type is for you? Your decision might depend on whether you want an internal or external model—Enhanced IDE (EIDE) or SCSI, respectively. All the jukeboxes tested had quad-speed drives, and we found performance to be about the same for each. Once the jukeboxes were up and running, they all performed well. However, our testers found setting up the jukeboxes a time-consuming chore, which many did not complete: The jukebox's software drivers aren't Plug and Play compatible.

**Latest Spin** NEC Technologies literally changed the face of jukeboxes with its MultiSpin 4x4 CD-ROM Changer. Instead of offering a standard magazine or tray loading-mechanism, NEC developed a more familiar way to insert CDs into a drive—a tray without a caddie (much like the kind found in many car stereos).

To load a disc, you just push one of the four numbered buttons on the front of the drive to select the internal slot you want. If the slot you choose already has a CD in it, the MultiSpin automatically ejects it.

When you select a disc, either through software or by pressing the corresponding button on the front of the drive, the CD is moved into position against the drive's read head. The MultiSpin's control panel has a headphone jack with a volume control, but the MultiSpin lacks audio CD controls. You'll need to use a software-based control panel if you want to listen to music.

The MultiSpin isn't Plug and Play compatible, but it is the easiest of the bunch to install and set up. Its manual gives simple step-by-step instructions, which our testers had no problem following. The drive uses an EIDE interface, but an adapter board is included for IDE-based systems.

**Jukebox Pioneer** Pioneer's DRM-624X is a good choice if you think you'll need to use more than four CD-ROMs at a time. It can hold up to six discs at once, and distinguishes itself by holding them in a removable magazine. If you're a big fan of productivity, you can buy several magazines (about $25 each), and categorize your CD collection in them. The downside to a magazine is that whenever you want to add or remove a CD, you have to remove the entire magazine.

The DRM-624X offers slightly faster data

**Pioneering Efforts:** The DRM-624X has a removable magazine for loading discs.

**DRM-624X** / Pioneer / (800) 444-6784 / $349 est. street price / *Reader Service No. 479*

throughput than the other drives with a 4.4-revolving speed. And it comes with everything you need, including a SCSI card and cable, something both Smart and Friendly's CDJ 7004 and Turtle Beach's TBS-7400 SCSI drives don't have. A copy of PhoneDisc's PowerFinder is also included.

Installation posed some hassles for our testers, and the DRM-624X's manual wasn't much help. In the model tested, we found some compatibility problems with the Windows 95 Plug and Play drivers and

**Barely Smart:** The CDJ 7004 holds seven CDs, but has only the essentials.

**CDJ 7004** / Smart and Friendly / (800) 959-7001 / $349 est. street price / *Reader Service No. 480*

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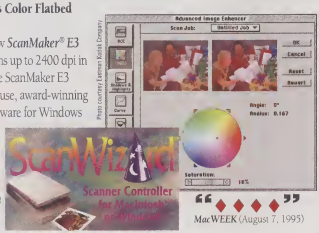


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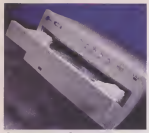

**Seven and Some:** The TBS-7400 comes with extras, like shareware CDs.

**TBS-7400** / Turtle Beach Systems / (800) 684-0190 / $369 est. street price / *Reader Service No. 481*

the DRM-624X's real-mode drivers. But once set up, the DRM-624X worked flawlessly, automatically assigning drive letters to each CD. There's also a headphone jack with volume control on the front of the unit. While the DRM-624X is a solid drive, expect to call tech support for initial installation and setup.

### Seven Times the Smarts

For the ultimate in jukebox capacity, Smart and Friendly's CDJ 7004 and Turtle Beach's TBS-7400 offer room for seven CD-ROMs, both using an internal tray mechanism. The CDJ 7004 is the bare-bones model of the two. Its $349 street price is impressive, but all you're getting is the drive.

No SCSI card, cable, or software titles are included—just a drive, a power cord, and some software drivers. Once again, installation wasn't a simple point-and-click affair. The CDJ 7004's drivers are for Windows 3.1, and posed some installation hassles. Interestingly enough, when our testers installed the CDJ 7004 using Windows 95, it automatically recognized the drive and the jukebox worked flawlessly—all without our testers having to install anything. Chances are, however, you'll have to fiddle with the drivers, regardless of your operating system.

Once the CDJ 7004 was set up, it proved as simple to use as the MultiSpin. On the front of the CDJ 7004 there's a button for each CD tray—to change a disc all you do is push a button and the requested disc pops out.

Considering what comes with the CDJ 7004, it really isn't the best buy. For the same price, the TBS-7400 offers the same speed, capacity, and more add-ons.

### Seven Slots and More

Turtle Beach's TBS-7400 delivers a lot more for your money. Along with software drivers and a flurry of SCSI and audio cords, it includes headphones and a few shareware and Microsoft demo CD-ROMs. The TBS-7400 also comes with a nifty audio utility that gives you master control for playing up to seven audio CDs. The unit itself looks identical to the CDJ 7004, with buttons on the front for loading and unloading, a headphone jack with volume control, and

## HOW IT WORKS CD-ROM JUKEBOXES

**Load:** Inspired by the CD players found in car stereos, some CD-ROM jukeboxes use a trayless loading device. You click on the button of the slot you want filled, place the CD in the slot, and a small wheel inside pushes the CD back to the housing area.

**Store:** Once a disc is loaded, it's held on either end by two guiding rails. All loaded discs are stored in semicircular slots. Acting like an elevator, the slots move up and down until the right slot matches up with the guiding rails. Then the CD is pushed into that slot.

**Read:** When you select a disc to play, the slots move up and down to match the correct disc with the guiding rails. The rails then push the disc toward the read head, which is housed near the drive's front slot.

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# What's In the Jukebox?

| | NEC's MultiSpin 4x4 | Pioneer's DRM-624X | Smart and Friendly's CDJ 7004 | Turtle Beach's TBS-7400 |
|---|---|---|---|---|
| **Capacity** | Four discs | Six discs | Seven discs | Seven discs |
| **Loading Mechanism** | Trayless | Magazine | Tray | Tray |
| **Format** | EIDE | SCSI-2 | SCSI-2 | SCSI-2 |
| **Price** | $279 | $349 | $349 | $369 |

two audio jacks in the back for hooking up the drive directly to speakers.

Installation was a similar story. In fact, the SCSI drivers for the TBS-7400 are all done under DOS and can get confusing. But once set up, the TBS-7400 worked just as simply as the others.

**Wind It Up** All four drives gave us trouble during installation. Unless you're a master of software drivers, you'll probably want to budget in a few calls to technical support when you're first setting up the drives. The MultiSpin 4x4 was the only one with a straightforward routine for Windows 95 installation, but even it wasn't foolproof. It is, however, the only drive of the group that supports EIDE and IDE connections.

All four drives, however, are easy to use once they're installed. Our testers picked the MultiSpin for overall usability. Its slot loading-mechanism is the most intuitive of the jukeboxes. If you're looking for more capacity at a reasonable price, Pioneer's DRM-624X is a good choice, especially when you consider the included SCSI card. Its magazine loading was awkward for our testers, but it posed no real problems. Finally, if you want some serious capacity, Turtle Beach's TBS-7400 stands as your best bet, with simple its internal-caddie and push-button CD changer. Add all that to its under-$370 price, and you have yourself a deal.

**JOC, DT, and DZ**

*Contributors to SOHO:* James Oliver Cury, Dylan Tweney, *and* Daisy Zhao. *Edited by* Jack Lyon.

## DECISION MAKER

WHICH **JUKEBOX** IS BEST FOR YOU?

## Labnotes

Our usability testers quickly found out that setting up a CD jukebox for the first time is a major pain. Installing hardware components (like SCSI cards) was no problem. But all of the jukeboxes required software installation to help Windows 95 read the jukeboxes' different drives, assign a drive letter to each, and load the CDs in subdirectories under one drive letter. Since the software drivers in the jukeboxes weren't Plug and Play compatible, each of the jukeboxes scored very low on software setup. Most of our testers couldn't even complete setup, and found that the software drivers often conflicted with Windows 95.

Once the CD-ROM drives were installed, our testers determined how easy it was to insert a disc and locate it onscreen with Windows 95's Explorer. Our testers also tried to replace a particular disc in the jukebox with another, noting how easy it was to see which slots were already occupied, and how long it took to switch from one disc to another. In addition, our testers determined how intuitive it was to use the external controls on each drive.

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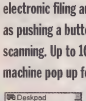


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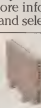

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CURRENT EVENTS

# Hot Off The Web

While they won't replace the five o'clock news or your morning paper any time soon, dozens of news sites on the Web are challenging traditional news outlets. All the major television networks, newspapers, and newsmagazines are reworking content and/or creating entirely new material for their online efforts.

CNN Interactive is a great place to start (see "One-Minute Guide" below), with news-related stories, photographs, sound, and video clips from around the world. You'll also want to scan the *Wall Street Journal* on the Web, which contains timely tidbits of information that didn't make the ink-and-paper version.

Some of the best sites provide unrivaled news and information about the online and computer-technology industries. For starters, be sure to bookmark *PC Computing*'s Web site and the ZDNet site, where you'll find continually updated news and information.

**Get Me Rewrite!** Grab instant information and news updates from the Web to supplement your morning paper.

The *New York Times* publishes a free 8-page summary of its daily newsstand edition, called New York Times Fax. You can download it from its Web site as an Adobe Acrobat file, or have it sent directly to your fax machine. Most other major newspapers, including the *Washington Post*, *San Francisco Chronicle and Examiner*, *San Jose Mercury News*, *Boston Globe*, and *Los Angeles Times*, maintain Web sites brimming with in-depth news and information; many of their daily newsstand editions include pointers to material on their Web sites.

Don't fire your paper deliverer or cancel cable TV just yet. But surf to some news sites and you'll see that adding the Web to your news diet will keep you better informed and ahead of your competitors.

## ONE-MINUTE GUIDE Extra! Extra! Online News Sites

Nothing beats a leisurely cup of coffee and the Sunday newspaper. But if you want updated news and information that newsprint and television simply can't match, check out some of the top news-related sites online.

**CNN INTERACTIVE** Ted Turner's Cable News Network Interactive is a colorful, news-packed site with up-to-the-moment world, national, and state information (http://www.cnn.com).

**CNNFN** CNN Financial Network is brimming with business news and market updates (http://www.cnnfn.com/index.html).

**WALL STREET JOURNAL ON THE WEB** Check the *Wall Street Journal*'s interactive edition for late-breaking business news (http://www.wsj.com).

**ZDNET** Bookmark ZDNet, which has links to more than a dozen Ziff-Davis news and information sites (http://www.zdnet.com).

**NEW YORK TIMES** The Gray Lady is just as gray online. Still, New York Times Fax gives you all the news that's fit to browse in a handy 8-page summary via fax or Adobe's Acrobat (http://nytimesfax.com).

**SAN JOSE MERCURY NEWS** Mercury Center, the *Mercury News*'s online news site, leads the league in in-depth, Web-based news and information, with an unrivaled Silicon Valley perspective (http://www.sjmercury.com).

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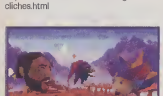

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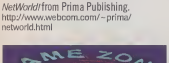
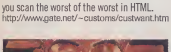
**IT'S YOUR WORLD** David Rothman explores what people are really doing on the I-Way in *NetWorld!* from Prima Publishing.
http://www.webcom.com/~prima/networld.html




**IN THE ZONE** Check out Viacom New Media's Game Zone and play a Java version of Zoop—it's like Tetris, only better.
http://www.zoop.com/

**HIGH-SPEED SURFING** Upgrade your I-Way access to ISDN speeds for only $14.95 a month through InterNex.
http://www.internex.com

**WANTED, DEAD OR ALIVE** The U.S. Customs Service's 10 Most Wanted Fugitives site lets you scan the worst of the worst in HTML.
http://www.gate.net/~customs/custwant.htm



**SAIL THE NILE!** All angles are equal at Egypt Interactive, your one-stop site for comprehensive Egyptian information.
http://www.channel1.com/users/mansoor/eir.html

*Free Stuff is written by* DYLAN TWENEY. *Downloads? E-mail Dylan_Tweney@zd.com. I-Way Patrol is written and edited by* RICH SCHWERIN. *I-Way report to share? Send e-mail to Rich_Schwerin@zd.com.*

## Free Stuff!

**Dylan Tweney:** Free and Easy Downloads

### Read Mac Disks on Your PC ★★★★★

Can't we all just get along? With TransMac, your PC can finally read Macintosh floppy disks.
**File:** TMAC14.ZIP **Size/Time*:** 94K/3 minutes

### Shortcuts to Your Favorite Applications . . . ★★★★★

With TrayIcon for Windows 95, your favorite applications are just a mouse-click away.
**File:** TRAYICON.ZIP **Size/Time*:** 57K/1 minute

### . . . and Folders ★★★★

WinGo Folder Aliasses lets you open your most frequently used folders from a menu. Nifty!
**File:** WNGOFS.ZIP **Size/Time*:** 56K/1 minute

### Easy UUEncoding for Windows ★★★★

Windows UUCoder converts binary files to UUEncoded text files for easy e-mailing.
**File:** UCODE.ZIP **Size/Time*:** 30K/30 seconds

### Bookmark Manager ★★★★

Netscape's Navigator bookmarks can be a real headache. Simplify things with Sextant.
**File:** SEXTNT10.ZIP **Size/Time*:** 283K/7 minutes

### Blast from the Past ★★★★

From the time when Atari was king comes Super Pong 95. Variations include Classic and 4-Way.
**File:** PONG95.ZIP **Size/Time*:** 665K/17 minutes

### Web Address Book ★★★★

Tired of obscure, difficult-to-type URLs? Get FURL (Find URL), a URL database utility.
**File:** FURL11.ZIP **Size/Time*:** 274K/7 minutes

### Keep Your Eye on the Net ★★★

Want to see what's new? NetBuddy automatically notifies you when your favorite Web pages are updated.
**File:** NETBUD.ZIP **Size/Time*:** 230K/8 minutes

### View Files Fast ★★★

FmView 1.2 gives you an instant preview of any file in File Manager (Windows 3.1 or Windows 95).
**File:** FMVIEW.ZIP **Size/Time*:** 389K/10 minutes

## Package Deals: Why Stop at One?

**UNPACK ANYTHING**
*Have you ever downloaded a file only to find it was compressed in some arcane format WinZip can't handle? Try WinPack32—it handles most archive formats.*
**File:** WPACK32D.EXE
**Size/Time*:** 533K/14 minutes
★★★★

**DEAL 'EM**
*Why settle for Microsoft's lame Hearts game? Get Real Deal, a shareware card-game package, and you can play Euchre, Spades, Pinochle, Cribbage, and more.*
**File:** RDEAL.ZIP
**Size/Time*:** 899K/23 minutes
★★★★

**POINT THE WAY**
*This huge collection of animated cursors will keep you amused for hours. Almost minimovies, these animated cursors will add pizzazz to your desktop or presentations.*
**File:** ANICUR.ZIP
**Size/Time*:** 285K/7 minutes
★★★★

*Ratings:* ★★★★★ *Cannes.* ★★★★ *An Alfred Hitchcock retrospective.* ★★★ *Passes to Tarantino's new flick.* ★★ *Colorized classics, edited for TV.* ★ *Reruns of daytime soaps.*

*ONE-STOP SHOPPING: ALL FILES ARE AVAILABLE FOR DOWNLOAD FROM *PC COMPUTING*'S WEB EDITION AT HTTP://WWW/PCCOMPUTING.COM AND IN OUR FORUM LIBRARIES ON COMPUSERVE (GO PCCONTACT) AND MICROSOFT NETWORK (GO PCCOMPUTING). FILE SIZES QUOTED ARE THE BYTES IN THE ZIP FILE; DOWNLOAD TIMES ARE CITED AT 14 KBPS

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# HotList

BY JACK LYON

## Bookmarks of the Rich and Famous

Thank you, thank you very much. This month, we're servin' up some rockin' good news—our spies jumped the gates of Graceland, phoned the Psychic Friends Network, and went on stakeout with the Drug Enforcement Administration, just to get the hunka burnin' hotlist of the King—Elvis Presley. He may have left the building, but we have his bookmarks. See what Elvis has been up to lately, here and online (http://www. pccomputing.com).

**Return to Sender**
Elvis Presley Stamps
http://www.kiosk.net/elvis/

**Nothin' but a Hound Dog**
The American Kennel Club
http://www.webpress.net/akc/

**Long Live the King**
The Elvis Sightings Page
http://mwlink.com/~timelvis/news1.html

**Love Me, Tender**
Make Money Fast
http://www.batsenet.net/~ebersabe/makefast.html

**Elvis Lives!**
Internet Anagram Server
http://www.wordsmith.org/awad-cgibin/anagram

**Blue Suede Shoes**
Imelda Marcos Music Academy
http://www.earthlink.net/~hectorsan/demo/imelda.htm

**Priscilla's Memoirs**
The King and I
http://www.mssstate.edu/MVtitle-exact?title=The+King+and+I

**Hunka Hunka Burnin' Love**
The Science of Obesity and Weight Control
http://www.iiop.com/~blvestrman/

**Jailhouse Rock**
Alcatraz Island
http://woodstock.nmro.nps.gov/alcatraz/

**Viva Las Vegas!**
The Gambler's Den
http://grannercj.ius.com/~djdobbs/index.html

**Your Cheatin' Heart**
Congenital Heart Disease Resource Page
http://www.csun.edu/~hfmth006/sites/heart.html

**Too Much Southern Cookin'**
Elvis Is Everywhere
http://www.mindspring.com/~lartigue/Elvis_is_Everywhere.html

**Heartbreak Hotel**
The Betty Ford Clinic
http://server.berkeley.edu/saaps/gl/gtbfc/faq.html

**Don't Be Cruel**
Lisa Marie Presley Files for Divorce
http://www.geocities.com/NS-Boy/jackie_presley/index.html

**I Can't Help Falling in Love With You**
Overcome Love Obsessions
http://ttx.com/bookzone/10002277.html

**Bopper with a Badge**
Drug Enforcement Administration
http://www.usdoj.gov/dea/deahome.htm

**Forget Colonel Parker**
Kentucky Fried Chicken
http://www.rsinet.com/CYBER~NET/KFC/

**All Shook Up**
Recent Earthquakes
http://www.c/eng.carleton.ca/cgi-bin/quakes

**Elvis Has Left the Building**
Graceland
http://www-swiss.ai.mit.edu/summer94/graceland.html

**Bananas, Peanut Butter, and Jumpsuits**
The Inventory of the Estate of Elvis A. Presley
http://www.aksi.net/jpp/

**Preach on, Brother**
The First Presleyterian Church of Elvis the Divine
http://pages.prodigy.com/NJ/zxq45a/zxq45a.html

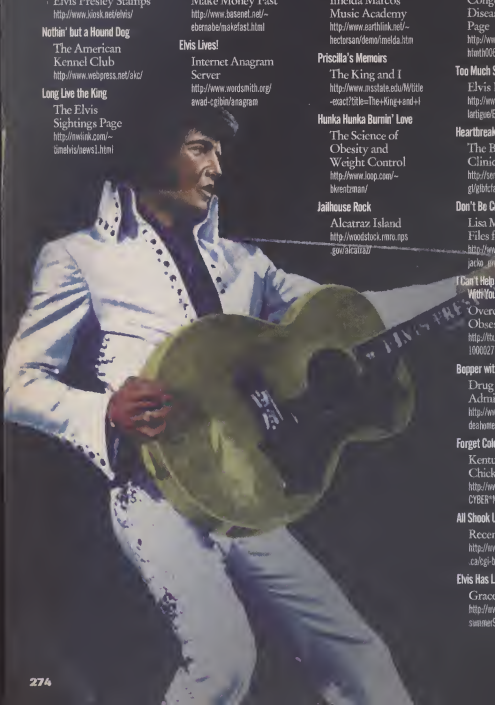
**Ninjas with Sideburns**
Elvis and the Martial Arts
http://www.altranet.com/~eclipse/ma/elvis.html

**What a Star!**
Elvis's Astrological & Pachological Magazine
http://neonline.com/~illeinti/mag.html

**Home Page**
City of Memphis
http://www.ci.memphis.tn.us/

**Cheap Imitations**
Elvis Impersonators
http://www.fred.net/elvis/eimpersonator.html

**Tapestries Fit for a King**
The Velvet Elvis Gallery
http://www1.zdnet.com/voyager/elvis/gallery/index.html

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December 5, 1995
Dell Dimension P100t

PC MAGAZINE EDITORS' CHOICE
December 5, 1995
Dell Dimension XPS P133c

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- 8MB RAM (40MB Max RAM)
- 256KB L2 Cache
- 540MB Removable Hard Drive (1.2GB Max)
- Smart Lithium Ion Battery with Advanced Power Management
- 32-bit Local-bus Video, 1MB Video RAM
- 2 Type II/1 Type III PCMCIA Slots
- 6.2 Pounds
- 1 Year Warranty†

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- 2 Type II/1 Type III PCMCIA Slots
- 6.2 Pounds
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- 256KB L2 Cache
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- 2 Type II/1 Type III PCMCIA Slots
- 6.2 Pounds
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Dell's featured computer artist is Diane Feinster of Pacolica, CA

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- 9FX Motion Graphics Accele 2MB VRAM (128-bit 4MB VRA
- 6X Multi-session EIDE CD-RO
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- 6X Multi-session EIDE CD-ROM Drive
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PC MAGAZINE EDITORS' CHOICE

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- 256KB Cache
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- 15LS Monitor (13.7" v.i.s.)
- 64-bit PCI 1MB DRAM Video (2MB DRAM Max)
- 4X Multi-session EIDE CD-ROM Drive
- Sound Blaster 16 Sound Card
- Altec Lansing ACS-5 Speakers
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## DELL DIMENSION P75t
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- 256KB Cache
- 850MB Hard Drive [12ms] (11
- 14XE Monitor (13.1" v.i.s.)
- 64-bit PCI 1MB DRAM Video (2MB DRAM Max)
- 4X Multi-session EIDE CD-RO
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- 64-bit PCI 2MB DRAM Video (128-bit 4MB VRAM Max)
- ★ **6X Multi-session EIDE CD-ROM Drive**
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Dell Dimension XPS P166c

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**Dimension XPS P166c.** Estimated

PC MAGAZINE 1/23/96

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PC WEEK 1/8/96

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